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MANUAL

OF

EMPIRICAL PSYCHOLOGY

AS AN INDUCTIVE SCIENCE.

A TEXT-BOOK FOR HIGH SCHOOLS AND COLLEGES

BY

DR. GUSTAV ADOLF LINDNER,

PROFESSOR IN THE UNIVERSITY OF PRAGUE.

AUTHORIZED TRANSLATION

BY

CHAS. DEGARMO, PH.D. (HALLE),

PRESIDENT OF SWARTHMORE COLLEGE, SWARTHMORE, PA.

BOSTON, U.S.A.:

D. C. HEATH & COMPANY.

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TRANSLATOR'S PREFACE.

THE reasons given by Professor Lindner for the production of this book may at the same time serve as reasons for its translation into English. That the book is full of vitality, having a rich, interesting content, and offering a satisfactory *explanation* of those things which others merely *affirm*, no one can doubt who reads it.

But in addition to these general considerations, there are other reasons why this book is particularly needed in this country. American teachers have certainly demonstrated their faith in psychology as the only sure basis for a sound pedagogical practice, but thus far experience seems to have revealed to them but little intimate relation between the two. Both the faith and the experience of these teachers are right. Psychology certainly is the basis of true teaching, and most current psychologies do fail to reveal what a study of mind is able to do for the training of mind. The reasons for the latter fact are not far to seek. In large degree, the current psychologies are abstract, rationalistic manuals drawn primarily from the Scotch or other metaphysicians, and even when well written and fairly illustrated, they yet fail to excite any general vital interest in the subject; because, starting from *a priori* rationalistic principles, they fail to touch the experience of the student. Lindner, on the contrary, begins with experience and never gets away from it. Every page is a direct incitation to introspection. Self-examination seems to come spontaneously to the reader.

Again, where the current text-books on psychology do not take their rise in metaphysical systems, they usually develop the subject of psycho-physics far beyond any practical bearing upon the problems of education, even if they do not tend to or sink into an irrational materialism. Lindner indeed founds the beginnings of knowledge in psycho-physics, but he then proceeds to give a truly spiritual explanation to mental processes and products.

Another reason for the lack of vigor with which young teachers pursue the study of psychology is to be found in the inherently uninteresting character of most treatises on this subject. Lindner is always interesting. His explanations are always lucid, pointed, and self-consistent, while every department of science and of experience has yielded its choicest facts to enrich the content of his book.

It is well known to every American student of pedagogics in Germany, that the greatest activity in pedagogical thought in that country is to be found among the members of the Herbartian school. They are attacking all important lines of educational thought with the greatest vigor, and are fast reducing education to a true science. The great secret of their aggression and efficiency is to be found in the fact that they have a vital psychology, one that shows the genesis, and the development of thought and feeling and will, thus revealing in clear light the necessary stages of a rational education. Starting with the *given* in every department of mental life, they point the way to what should be. Perhaps the best and most popular exponent of this school of psychological thought is Professor Lindner, whose work is characterized by great pedagogical skill, both in statement and in arrangement for practical mastery. One reason, therefore, for the translation of this book is that English speaking students may have the opportunity of drinking at these living fountains of psychological truth.

While this volume is a direct inspiration to the teacher, it is at the same time, perhaps, the best introduction ever written to the higher realms of thought. On almost every page there is an incitation to further study, and the whole book is a fine illustration of the beauty and value of a truly philosophical investigation. Starting with known and universally recognized facts, the subject is developed step by step, with ample and apt illustration, being always free from dogmatism or befogging statements.

For the rest, no student can study these magnificent chapters on thought and desire and will without being impressed with the marvels of his own being, and strengthened by his clear view into the psychological beginnings and growth of passions and all aberrations of character.

It is in the belief, finally, that this worthy book will prove a lasting blessing to him who reads, that the translation is offered to the public.

CHAS. DEGARMO.

NORMAL, ILL., September, 1889.

PREFACE.

MORE than a quarter of a century has elapsed since this book began its rounds among the schools and the educated public. Its path had not been smoothed, and many a prejudice was to be overcome. But supported by the confidence manifested by the teaching world, it has gained a firm foothold in our schools and institutions, and now begins its eighth round with renewed courage, hoping for like friendly reception. The author is conscious of having used a free hand in improving the successive editions, and performs a pleasant duty when he thankfully acknowledges the assistance of all those colleagues who have contributed to the perfection of the book.

As a reminder of its origin, the words with which the first edition of this book was introduced, may fitly find a place here:

"As I offer these pages,—the result of many years of study and pedagogical observation,—to the judgment of the public, as well as to the appropriate regard of a royal educational department, I regard it my duty to say but little concerning the purpose and plan of the same. The motive to the preparation and publication of this volume was a double one. The first was the experience, to me sufficiently clear, that the existing psychological text-books, however valuable they may be, leave much to be desired in regard to compre- ·nsibility and incitation to original thought. An attempt to

remedy these lacks would, therefore, appear desirable. The second motive was the conviction that in *empirical* psychology one can and should have regard to those *real* explanations which lie in the *facts* and which can be derived without metaphysical exposition; and, further, that one has no reason whatever to limit himself to mere verbal explanations—for what else does the old doctrine of the so-called *faculties* offer?

"If empirical psychology is to offer not only an aggregation of facts, but is to lead to the study of philosophy, it must, though not philosophy itself, at least provide a foretaste of the same, must guard against all incompleteness and superficiality by the earnestness of its investigation. In this regard, nothing could be more injudicious than a presentation of results without sufficient grounding, without organic development. Therefore, the author has chosen in this work that *genetic* method which, proceeding from the known and unquestioned facts of common consciousness, seeks to develop the psychological laws which condition these facts, and which are inductively derivable from them, whereby nothing shall be set down which, for every unprejudiced and thinking man, does not follow from results already obtained in connection with these facts. In this way, not only positive results in knowledge are to be produced, but also an abiding *interest* in connected investigation leading to these results; for in the awakening of this interest consists, finally, the chief preparation for the study of philosophy.

"In regard to the relation which this work bears to psychological literature, it may be said that, for that conception of empirical psychology which is here the ruling one, almost the only serviceable points of relation are to be found among the thinkers of the Herbartian school. With the latter, however, the connections are to be met with as often as could be wished. Herbart's standpoint was that of empirical psychology; only this psychology works without metaphysical or

mathematical tools. In regard to this point, Herbart himself says, 'I rest not alone upon the single point of the ego, but my basis is as broad as all experience' (Preface to *Psychology as a Science*).

"And herewith I commit this book to the public. It is, above all, a manual of instruction, and should be regarded as such. It was, therefore, the comprehensibility of expression to which I felt obliged to direct my most careful attention, all the more because I am convinced that the most abstract truths may be clothed in simple words just as far as they have been clearly thought, and that true scientific treatment is injured by nothing more than by ingenious pomposity of words, and by phrases behind which stands no thought. How far I have succeeded in my task ' to bring the doctrines of psychology into a form accessible to the common understanding, founded on facts and illustrated by examples,' those may judge to whom, according to their relations to the school and to science, this judgment is committed."

CILLI, January, 1858.
PRAGUE, October, 1885.

DR. G. A. LINDNER.

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INTRODUCTION.

I.

PSYCHOLOGY IN GENERAL.

§ 1. CONSCIOUSNESS.

That which is extended in space we call matter or material. A change in matter is motion. There are two necessary conditions of motion, time and space. The falling of a stone, the wilting of a leaf can not take place without space and time.

Since space is essential to changes in matter, these changes may be termed *extensive* conditions of matter; in so far as they concern merely the outward conduct of matter, they appear only as the external conditions of the same.

Hand in hand with the external, extensive, or space and time changes of things, go the internal, the intensive, or the mere time conditions, which we think of as belonging to the ultimate indivisible elements of matter called atoms. These inner conditions of the atoms are, of course, entirely withdrawn from our experience, for whatever falls within the range of our experience must of necessity be external. Notwithstanding, however, we must assume that the inner conditions of the atoms have changed, when we perceive a change in the outward aspect of the same, just as we assume the unchanged state of those inner qualities of matter, which are entirely unknown to us, so long as the outer conditions (effects, manifestations of force) do not change.

There is but one group of internal conditions which does not elude our experience, but which is immediately accessible: these conditions are our own inner states; for we stand not without, but within this group.

Our own inner, unextended, time conditions, we call mental states, or ideas; the totality of these is called CONSCIOUSNESS; the interpenetration or synthesis of the same on all sides to the strict unity and oneness of the "I" is called SELF-CONSCIOUSNESS.

§ 2. THE SOUL.

That which self-observation teaches about consciousness may be reduced to three fundamental facts.

There are given:

1. A multitude of ideas (concepts), which come and go;

2. The ever changing unity of the same, in the form of consciousness;

3. The union of the successive states of consciousness into the oneness of self-consciousness, in the form of a single unchangeable ego, or I.

The interpretation of these three fundamental facts has led to the assumption of a *soul essence*, or *substance.*

We distinguish between a substance, or essence, and the conditions or states of the same. The essence ever endures, even though its states change. *The essence to which all our ideas, and all of the inner conditions derived from them cleave, we call the soul.* Ideas are states of the soul—the soul is their bearer.[1]

The unity and singleness of consciousness enables us to draw a conclusion as to the nature of the soul substance.

1) In the technical language of philosophy, "essence" bears the name *substance.* States or qualities are called *accidents;* the relation between substance and its accidents, which in common language is characterized by the word "have," to possess, bears the name *inherence*, and is one of the hardest problems of metaphysics.

It might be either simple or compound; it might further be identical with the cause of the bodily changes, or different.

The assumption of a many-membered bearer of soul states is excluded by the fact that all spiritual conditions, however changeable and contradictory they may be among themselves—the simultaneous as well as the successive—exhibit the highest degree of reciprocal attraction and interpenetration. Our ego presents itself to us as one and indivisible amidst all the changes of soul states, which would not be possible were the states of the soul, like those of objects, divided among different substances. The bearer of spiritual states must, therefore, be simple.

Notwithstanding this, however, it might be one and the same with some one of those substances upon which the states of our body depend, since these are also to be thought as simple. As a matter of fact, a distinguished thinker, the philosopher Leibnitz, claimed for each one of them the character of a representing essence. But that simple substance which we have assumed as the bearer of the purely time conditions of our minds, must, under all circumstances, take such an exalted position among the primal substances of the body, that we are fully justified in distinguishing it from all elements of our body as a substance of a peculiar and higher kind, and in giving it a special name. This substance, of whose conditions alone we have immediate knowledge, and upon which the processes of our body must be projected through a chain of reciprocal actions in order to reach our consciousness, is the soul. It is, therefore, a simple substance, or essence, different from the body, concerning whose further peculiarity and actual essence nothing more can be determined from the standpoint of experience.[1]

1) The further elaboration of this subject, which forms one of the most difficult and most contested departments of philosophy, belongs not to empirical psychology, but to metaphysics.

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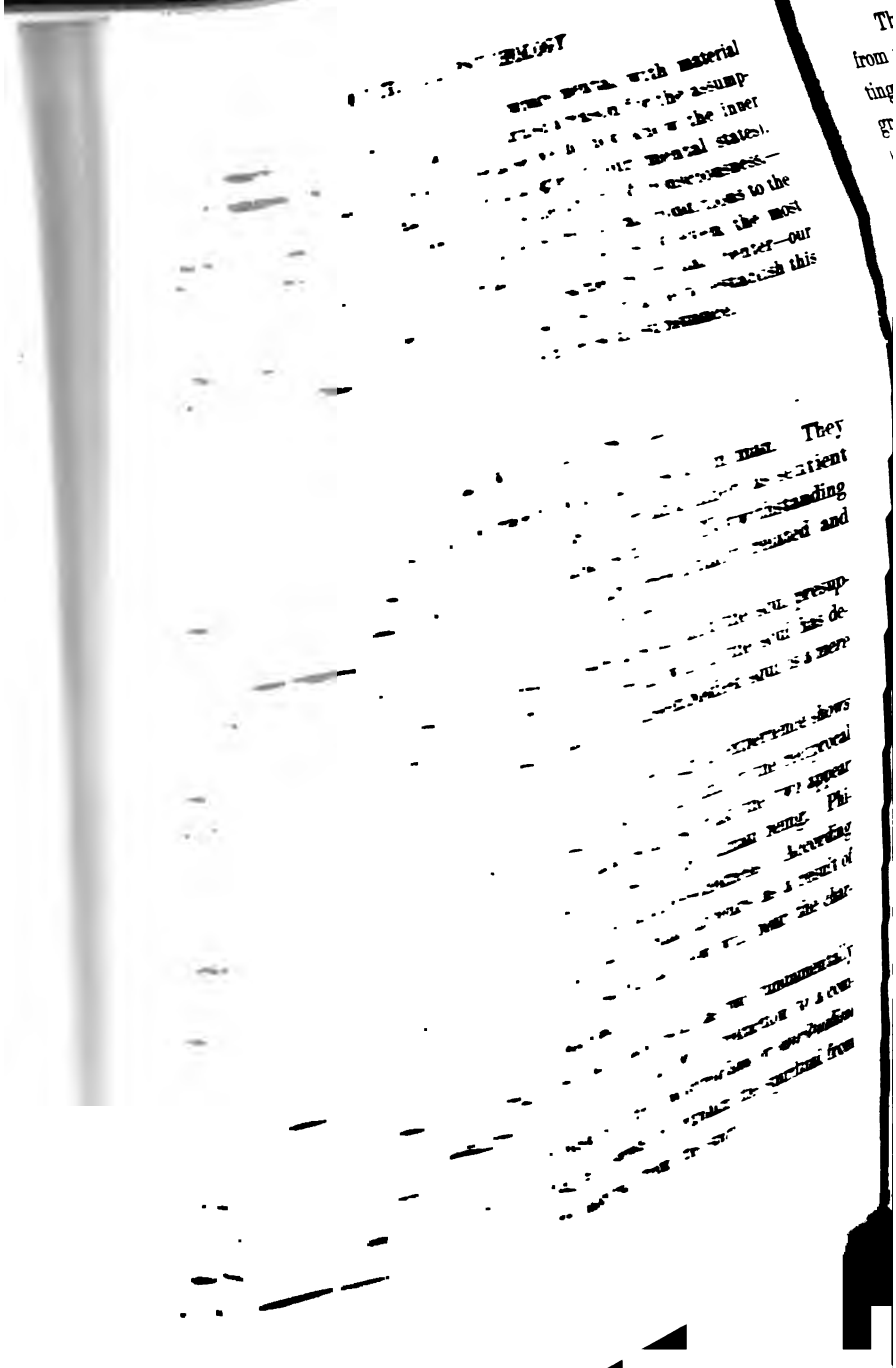


The conception of man according to *experience* proceeds from the fact that in the realm of experience we may distinguish two large dissimilar groups of phenomena; (1) the group of phenomena which pertain to *space* and *time;* and (2) the group which pertain merely to *time*, the two standing over against each other as outer and inner experience.

ANTHROPOLOGY, or the science of man, falls, therefore, into SOMATOLOGY; *i. e.*, the doctrine of the body; and into empirical PSYCHOLOGY, *i. e.*, the doctrine of the soul. Each of these sciences will have regard to the other only in so far as is absolutely necessary to the understanding of the facts.

Remark.—Since man is properly regarded as a *microcosm*, in that the general relations of the universe occur in man in smaller proportions (the human soul is formed in the image of God), any given view of the relation between the spiritual and the bodily in man is dependent upon the philosophical view which is held concerning the universe, and is in a certain sense only a copy of the latter. *Dualism* as a fundamental philosophical conception was introduced into modern philosophy by Descartes († 1650), who assumed two separate *substances*, the thinking substance, and the material substance (thought and extension). His successor, Spinoza, is the father of *Monism*, in that he taught that there is but one infinite substance, which exhibits itself to us from different sides as mind and nature. This thought was further extended in Schelling's philosophy of identity. In this system matter and mind stand side by side as different though equal forms of manifestation of one fundamental principle. The monism of Spinoza and Schelling separates into the spiritualistic branch, which finds its most extreme expression in Fichte's absolute ego, and into the realistic-materialistic branch, which begins with John Locke († 1704), and has its most significant continuance in the philosophy of the French clearing-up period, as well as in modern materialism.

§ 4. EMPIRICAL PSYCHOLOGY.

It is, in general, the problem of psychology to investigate the natural laws of soul life, and from these to explain the manifoldness of soul phenomena. In the solution of this

problem either of two ways may be pursued: that of *deduction*, which leads from the universal to the particular; or that of *induction*, which mounts from the particular to the universal. The first way characterizes the path of *speculation*, upon which the philosophical sciences proceed; the latter way shows the course of *experience*, which the empirical sciences pursue.

Accordingly, rational or speculative psychology as a part of philosophy is distinguished from empirical psychology as one of the sciences of experience. While the natural sciences with the help of the inductive method—founded by Bacon of Verulam († 1626), and applied by Newton with such brilliant results—pursues its own way, entirely independent of metaphysical investigation, psychology has been treated, until very recent times, almost entirely as a philosophical doctrine, in that metaphysical theories which have been posited concerning existence in general have been applied to the soul. The process was a deductive one. It is on this account that as many psychologies have arisen as there are philosophical schools.

In opposition to this conception, empirical psychology has set itself the task of proceeding from the particular facts of consciousness, and, in accordance with the method of induction, to base upon them an explanatory theory of soul life. Empirical psychology has this double advantage over the natural sciences: first, that these particular facts of consciousness as objects of inner experience are *immediately* accessible, whereas the objects of external experience in the natural sciences are only *mediately* known; *i. e.*, by being brought to consciousness through the senses; and second, that the abundance of these facts is extraordinary, on account of the ever-changing events of soul life and of the multiplicity of minds.

It finds itself at a disadvantage, however, in so far as the elements of psychological facts, on account of the unity of

consciousness, are not given separate, but sometimes manifest such a complication that they become problems for psychology, though being its sources of knowledge.[1])

While for outer experience everything divides according to space and time, and may be separated for clearness of human knowledge, the events of inner experience do indeed exhibit succession in time, but no juxtaposition in space. The knowledge of the original connection of the elements of soul life is, therefore, much more difficult than is the case with changes in space and time, and it need not, therefore, seem strange to us, that until the most recent times, the applicability of the causal notion to change in mental states has been entirely denied, and men were inclined to regard the faculties of the soul as powers which rule regardless of law.

Notwithstanding these difficulties, the application of the natural history method of induction to the sphere of inner experience has proved itself particularly fruitful, especially since Herbart's revolutionizing investigations, so that the place of empirical psychology among the *exact sciences* can no longer be questioned.

Remark 1.—Herbart's service accrues not only to rational, but also to empirical psychology, since his psychology is based, not so much on the single fact of self-consciousness, as upon the whole circle of facts of common consciousness. He himself says, "I do not stand upon the single point of the ego, but my basis is as broad as all experience." (Preface to Psych. as Science.) In that Herbart applied calculus, that mighty implement of investigation in natural science, to the phenomena of the equipoise and movements of conceptions, he brought psychology nearer to the exact sciences. It is true that his calculations relate only to ideal magnitudes, and to ideal relations, so

1) These complications assume extraordinary dimensions, because on account of the continuance of conceptions in a united state, the constitution of our consciousness at a given moment is determined, not alone by conceptions actually present, but also by those which have formerly been present, so that the whole psychical past projects into the immediate present.

that one could only imagine an application of the same to concrete psychical processes, but an attempt has recently been made to reckon with actually measurable magnitudes within the realm of mental life, and to produce, by way of experience, a measuring unit for the strength of conceptions. This is the theme of Psycho-physics, by G. F. Fechner (Elements of Psycho-physics, 2 part, Leipzig, 1860), whose avowed purpose is "The fixing of the measure of psychical magnitudes."

Remark 2.—Empirical psychology as an exact science is independent of all fundamental metaphysical views as to the essence of the soul (§ 2), and from the beginning it renounced the solution of those questions which presuppose such a fundamental view. In what the essence of the soul actually consists, how it enters into reciprocal action with the body as known in experience, how the simplicity of its essence is compatible with the multiplicity of its states, and in what the state of conceiving really consists, will be explained by empirical psychology, just as little as physics is able to answer the questions, What is matter? What is force? How are they related? But just as there remains to physics, notwithstanding this, a wide field of investigation in the kingdom of mediated natural phenomena, just so there remains a broad field of investigation open to empirical psychology, which is entirely independent of any metaphysical view concerning the essence of the soul. How, through the aid of the senses, sensations and perceptions arise, how they are treasured up through the memory, changed through the imagination, elaborated through the understanding; how the struggle of concepts calls forth the various states of mind, and what laws obtain here,—concerning these things much indeed may be imparted, quite independently of every fundamental speculative view. Empirical psychology will gain through the breadth of its investigations that which it may perhaps lose in depth; it will not make rational psychology superfluous, but will be rather a preparation for it, as well as for the study of philosophy in general.

§ 5. THE PRINCIPLES OF EMPIRICAL PSYCHOLOGY.

The principles (sources of knowledge) of empirical psychology are the facts of inner experience. These are gained by means of observation and experiment.

The observation is a fourfold one, since its *subject* as well as its *object* is double; *i. e.*, is either our own or another ego. We must distinguish, therefore, (a) our own observation of self, (b) our own observation of others, (c) the self-observation of others, (d) the observation of others on others. The last two kinds can come to us naturally only in the form of communications.

Self-observation is the most important source of psychological investigations. Only in this way do we learn the states of the mind in an *immediate* manner, in order afterward, *mediately* to conclude concerning the mental states of others from manifestations and communications. Yet this is subject to peculiar difficulties, since the observed object, the soul, does not lie before us, separated, like an object of outer experience, but coincides with the observing subject, the ego. The latter must, therefore, separate itself into an observing and an observed part, of which the first, the deeper, withdraws itself from observation; for if one should wish to make this also an object of observation, he would have to attempt another division of the ego, in which case the observing part would have again to withdraw itself from observation, and so on. Self-observation can, therefore, penetrate only to a certain depth, and there are phases of consciousness in which the plummet never touches bottom. Furthermore, there are conditions which one can not observe in himself, such as the beginnings of consciousness in childhood, the passions, or violent emotions, when we are "beside ourselves," and the various extreme and anomalous states of mind which appear occasionally in individuals only as a product of an extremely peculiar individual development (diseased states of the mind, etc.).

The observation of others must, therefore, be added as supplementary. This widens the circle of psychical facts beyond the narrow limits of the individual. We learn to know different individuals and in the most varied psychical

conditions. By this means the influence of inner and outer factors of bodily constitution, of temperament, of education, of association and calling, upon the psychical development is made manifest. In this connection it is particularly instructive to observe children and savages, insane people and criminals, persons in whom one sense is wanting, and other "odd" people. (Animal psychology, Kaspar Hauser.—Consult the works of Ideler, Pitaval, Knigge, Adel, Mauchart, Engel, Buelow, and others.)

Remark.—Of all the vast number of psychological facts, only a few will serve as starting points for an inductive investigation, since most of these facts are only the expression of a highly complicated psychological state. It appears necessary, rather, to simplify the psychical data through designedly produced situations, and through alternate exclusion and production of individual psychological factors in order to establish their influence upon the whole product. *Experiment*, which plays so important a part in the field of outer experience, is consequently not to be excluded from psychology. It has essentially contributed to the disclosing of those elements of all soul life, namely, sensations, according to their different peculiarities and the laws of our knowledge. The accessibility of experiment in the territory of derived states is indeed very limited, because the determination of simple elements is very difficult on account of the extraordinary changeableness of the soul phenomena.

§ 6. THE METHOD OF EMPIRICAL PSYCHOLOGY.

The inductive process assumes a special form in the various inductive sciences, according to the particular nature of any given science. In natural history it becomes a descriptive and classifying process; in physics, an explanation of facts by means of laws, and partly by hypotheses; in anatomy, a dissection, or separation of the manifold, while in physiology it becomes a *teleological* and *genetic* method. Empirical psychology employs just so much of each of these methods as its nature demands.

As a natural history of the soul, it seeks above all to bring the phenomena of consciousness into characteristic groups according to similarity, to describe and classify these groups as *types of soul activity.* This in particular was the standpoint of the *old* empirical psychology, which hypostasized these types into *faculties*,1) and thought in thus doing to have fulfilled its mission.

They forget that the faculties of the soul are mere abstractions of scientific thought, and not in any way objects of natural history, or anything real. The new psychology retains this distinction of faculties (Understanding, Reason, Memory, Imagination, etc.) that the learner may get his general bearings, but it can in no wise consider its work as finished when it has made these distinctions.

As an anatomy of consciousness empirical psychology separates the highly complicated phenomena of the same into its non-divisible elements—namely, into concepts—and as physiology of the soul it seeks, by means of the genetic method, to prove how, through the reciprocal action of the concepts in the course of the psychical development of individuals and of peoples, the various permanent and changeable conditions of consciousness are formed. This proof will be successfully made only when, as physics of the soul, it seeks to exhibit the laws according to which the reciprocal action of concepts is governed. Wherever notions of mag-

1) It is important for the beginner to get a clear notion of what is meant by *hypostasizing* types of mental activities into faculties, for the vocabulary of the old psychology is still employed and there is still constant danger of falling into this error. It would appear that a constant use of the terms employed in classifying the various phases of mental activity, such as *memory, imagination, perception, will, sensibilities*, etc., led men to think of the mind as an *organism* in which *memory, imagination, will, etc.*, were real component parts, or organs, just as the arm, the foot, the mouth, are organs of the body. In this way the *type* of mental activity, called *memory*, for instance, was made or *hypostasized* into a real *thing* or *organ* of the mind. This view is a most mischievous one for true psychology, since it has led, and in many minds still leads, to the barest formalism.

—*Translator.*

nitude appear, mathematics, so important in physics, may be applied; and where the facts are supported by a theoretical view, the hypothesis may be proposed in order to be able to test their validity by the consequences which follow from the hypothesis. That which follows from hypothesis, however, can of course not be taken as positive evidence.

Since empirical psychology as an inductive science is so new, a complete carrying-out of these combined methods in all branches of the intricate life of the soul can not at this time be expected.

Remark.—The credit of having critically shown the insufficiency of "faculties" for an explanatory view of soul life, belongs likewise to Herbart, who on various occasions declared against these "mythological essences." Along the way opened by him follow M. W. Drobisch (Empirical Psychology and Natural History Method, and First Elements of Mathematical Psychology), Th. Waitz (Text-book of Psychology as Natural Science), W. F. Volkmann (Elements of Psychology from the standpoint of philosophical Realism, and according to the Genetic Method, particularly the second edition, called "Text Book of Psychology," Coethen 1875, which is really a new encyclopedic work, summarizing all the former efforts of the author), J. W. Nahlowski, C. S. Cornelius, Schilling, Lazarus (Life of the Soul, in monographs, Periodical for Race Psychology, and Science of Language), Ballauf (Elements of Psychology), and many more. These men are met by the efforts of those who further Psychology from the side of Natural Science,—Hermann Lotze (Medical Psychology), Theodore Fechner, the father of Psycho-Physics, C. Weber (Sense of Touch), H. Helmholtz (Eye and Ear), Purkymie (Whole Department of the Senses), Wundt (Outlines of Physiological Psychology), together with many others. Prof. Robert Zimmermann (Philosophical Propaedeutic, second edition) also treats of Psychology according to analogy with natural science. C. Benecke (Text-book of Psychology as Natural Science, and Pragmatical Psychology, with other writings), immediately following Herbart, but along essentially deviating lines, has directed Psychology to the method of treatment pursued in the natural sciences. J. H. Fichte (Anthropology, Doctrine of the Human Soul, newly founded in the way of Natural Science) pursues the same end, so highly esteemed to-day, yet not by the way of induction, but by that of deduction.

II.

THE INTERACTION BETWEEN BODY AND SOUL.

§ 7. FACTS.

Mental states or activities are conditioned in their origin and course by processes which go on within our bodily organism. All knowledge of changes, or of events taking place around us, comes to us only through physical excitations, which, impelled by external occurrence, affect our organs of sense. All activity from within outward, wherein our mastery over the external world manifests itself, arises only through the movement of members of the body, which is called forth by certain acts of the soul (Will).

Soul and body, spirit and material organism, work together involuntarily. The body continually affects the mind, in that the material changes which accompany the continuance of the life-process are reflected in our consciousness, and thus fill a significant part of this consciousness; the body affects the mind also, in that the bodily assistance necessary in all mental acts or states is directly dependent upon the normal or the disturbed condition of the nervous system, and indirectly upon the general condition of the whole body.

The mind in turn reacts upon the body, in that all mental states, entirely aside from voluntary movements, are manifested in minute bodily movements, and are reflected now in stronger, now in weaker affections of the organic bodily functions. It is upon these delicate movements that play of feature and its permanent record, the *physiognomy*,

rest. Upon this influence depends, also, that promotion or depression of the bodily welfare which, proceeding from the soul, rules the body. Laughing and crying, emotions and passions belong here. Contentment of soul is a source of bodily health; passions and emotions which too powerfully affect the mind injure the body also.

The body appears, therefore, to be "a system of organized material expedients, calculated to concentrate all sorts of excitations in such a manner that they work upon the soul, and on the other hand to distribute its impulses again upon the surrounding world" (Lotze). The body is an organism whose noblest organ, the nervous system, has the function of accompanying all conditions of the soul with sympathetic vibrations, after the analogy of the sounding-board. This accompaniment of mental by bodily conditions may be called PHYSIOLOGICAL RESONANCE. It is not without its reflex action upon the soul (§ 12).

Remark.—The dependence of the soul upon the body is great. The condition of depressed or elated vital activity is imparted from the body to the mind. In the morning we are more disposed to mental work than in the evening. *Mens sana habitat in corpore sano.* Climate and temperature, food and poison, the indulgence in spirituous drinks—all of these indirectly affect the mind through the body. Hunger produces delirium. The sharp fluids in the stomach of the wolf and the tiger excite cruelty and a ferocious nature. Men are predisposed to many crimes and passions on account of the organic nature of the body. We see the dependence of the soul upon the body most clearly in the various bodily stages arising from age. The maximum and the minimum of developed vital activity, the former in middle, and the latter in old age, are the same for the body as for the mind. The rare exceptions where men of extraordinary mental power still retain their mental ability in old age, as a Sophocles, a Voltaire, a Goethe, an Alexander von Humboldt, do not destroy, but only prove the rule.

But, on the other hand, the body depends in a high degree upon the soul. Its health or sickness, its beauty or ugliness are not

alone the product of fixed natural forces, but are in great degree the creation of the soul itself. The mind assists the body in its growth and in its decay. Facts of medicine and physiognomy prove this. Our judgment of a man is chiefly determined by his physiognomy, because we ascribe this to the character of his mind. The errors which we make, in that we mistake a stupid fellow with a high brow for a genius, or a scamp with a smooth face for a gentleman, do not disprove the general law of the dependence of bodily form upon mental character, any more than the fact that Socrates, one of the noblest of men, was not more distinguished for external beauty.

§ 8. THE NERVOUS SYSTEM.

The nervous system is the organ of interaction between body and mind. The elements of the nervous system may, in anatomical regard, be reduced to two essentially different structures. These are nerve filaments, or fibers, and nerve cells.

Out of many of these parallel nerve filaments, or fibers, arise the nerves themselves. They branch out through the whole body, terminating at its surface, and form the peripheral parts of the nervous system, whereas the nerve textures arising from the accumulation of nerve cells, or ganglions, constitute the central parts of the nervous system.

This anatomical difference of structure corresponds to physiological function. It is the office of the nerve filaments to transmit in the direction of their length the conditions of excitation which have been produced in them and to effect the contraction of muscles, or to arouse the sensibility of the central parts. The nerve fibers, therefore, are extended from some peripheral structure of the body to a nerve center. If the peripheral structure is a muscle, the transmission of the excitation is in centrifugal direction; *i. e.*, from the center towards the surface, and ends in a contraction of the muscles; that is to say, in a movement. If, on the contrary, the periph-

eral structure is a sensitive place on the skin, the transmission is in centripetal direction; *i. e.*, from the surface toward the nerve center, and ends in a sensation; in other words, it realizes its power to arouse a sensation in the mind.

There are, therefore, two kinds of nerve fibers, those which conduct conditions of excitation centrifugally, and produce movements; and those which conduct conditions of excitation centripetally, and arouse sensation. The first are called *motor* nerves, or nerves of motion; the second are called *sensory* nerves, or nerves of sensation.

The state of excitation in nerves consists of a change in their electro-motive activity, in that, according to recent investigations, electric currents continually pass through the living nerve, even though it be inactive, and the electric current suffers a negative vibration in the transition from a quiet to an active state.

Remark 1.—The condition of nervous excitation may be brought about in any way by which the molecular equipoise of the nerves is suddenly disturbed; that is, mechanically, by means of chemical agents, or by means of the so-called imponderables (light, heat, and electricity). The speed with which the condition of excitation is transmitted, is for nerves in the living human body about sixty-one meters, and for the nerves of the frog, about twenty meters a second. The function of the ganglions is not so exactly ascertained as that of the nerve fibers. So much, however, may with safety be assumed, that the conditions of excitation of different nerve fibers can enter into reciprocal interaction only through the agency of the ganglions. G. H. Lewes traces the functional difference between nerves and ganglions to a difference in property or quality of the two. The property of nerves he calls *neurility;* that of ganglions, *sensibility.* (Compare G. H. Lewes, "The Physiology of Daily Life," Chap. 8.)

Remark 2.—The question of electric currents in nerves when in a quiescent state, which, since Galvani's investigations, and particularly since the discovery of the electric current in the frog, has been solved by the experiments of du Bois-Reymond. This investigator

obtained direct proof of the nerve stream by means of a highly sensitive multiplicator of 24,160 coils. The result was contrary to expectation. It was supposed that the inactive nerve would allow the magnetic needle to remain at rest, and that a deviation of the needle would only occur when the so-called nerve principle was aroused into activity. The contrary, however, was shown to be the fact, namely, that the quiescent nerve has a constant electro-motive activity, and that through excitation it experiences a change in a negative sense. Also the involuntary contraction or a cramping of muscles (tetanus) in the living human body is connected with negative fluctuations, as one may likewise convince himself with the multiplicator. (Compare the very diffuse paper of C. du Bois-Reymond on "Animal Electricity.")

§ 9. CENTRALIZATION OF THE NERVOUS SYSTEM.

A certain centralization of the whole nervous system is brought about by the system of ganglions, which are accumulated at certain points in the body and connected by nerve fibers.

This centralization is, however, a double one; first, in the strict sense of the word, a system which has its seat in the brain and spinal cord, and which with its peripheral subdivisions forms the so-called *cerebro spinal system;* and second, in a less strict sense, that which, independent of the cerebro spinal system, has its center in scattered ganglions, and is called the *sympathetic nervous system.* Only the first of these stands in immediate relation to mental activity.

The spinal cord is the first place of entrance and exit for the greater part of the peripheral cerebro nerves. Each nerve divides, just before its entrance, into two parts or roots, the anterior root containing the motor fibers of the united nerve, and the posterior root the sensory fibers.

In this way thirty-one pairs of roots enter the opening of the spinal column between the successive vertebræ.

The spinal cord, whose cross-section exposes a reddish, ganglion-like nerve mass, the so-called *gray matter*, performs the double office of a center, and of a conductor. It is a center because it can change the sense excitations of the sensory root into motor impulses through the anterior root, by transmitting the same through a cross connection, the excitation not having reached the brain or affected the mind at all, as has been observed on decapitated animals, and on those from which the brain has been removed. This transfer of an excitation of sensation into one of motion produces the so-called *reflex action.* The spinal cord is also a conductor, because it leads the nervous excitation in the direction of its length, from ganglion to ganglion along well insulated tracks to the higher centers, and finally to the brain itself.

The brain is a center of the highest order, the place to which nerve excitation must be projected in order to reach our consciousness. But the brain consists of parts which are anatomically and physiologically differentiated. We may distinguish particularly between the brain elongation (medulla oblongata) which is connected with the spinal cord and which is sensitive to nerve excitations, and the pair of non-sensitive, globe-like parts, the so-called hemispheres of the large brain. Since the medulla oblongata is to be regarded as a continuation of the spinal cord, we find here also the two functions of lateral and longitudinal conduction peculiar to the spinal cord. Reflex action is here also produced, only it is extended to the whole complex of motor nerves, and thus brings about in the reflex movements a greater regularity, and a certain automatic character.

The brain has, however, the fourth function of giving bodily expression to the higher mental activities, in which regard the hemispheres, on account of their great mass, appear to play an important rôle. But the particular office

of the brain and of its various parts is still shrouded in darkness.[1)]

Remark 1.—Reflex action shows us, in a simple case, how sense excitations are changed into motor impulses through the activity of the nerve centers. All soul life, in a last analysis, consists in this,—that we receive impressions from without, and react against them by means of motions. In reflex action one of these acts follows the other immediately. A fly lights on the hand and immediately the hand is withdrawn; an object flies before the eye, and the eye closes. If a whole series of connected motions follow the external impulse, we have the automatic movements, whose details are likewise withdrawn from the immediate influence of our consciousness; as, for example, the movements in breathing, for which there is a special center in the medulla oblongata, the so-called life-point, whose injury causes the breathing process, and consequently life itself, to cease. In the voluntary acts of man, movement does not blindly follow sensation, but between the two there comes a third, namely, a series of reflections, which involve the agency of the mind.

Remark 2.—The sympathetic nervous system is superior to the vegetative functions of our organism, the latter being almost entirely withdrawn from our consciousness, on account of their dependence upon the cerebro spinal system. The sympathetic system embraces the contractile structures of this sphere, especially the muscles of the blood vessels and the heart, of the gland ducts and the alimentary canal, and also of the reproductive glands. We are to think of the activities of this system as reflex movements, in that sense excitations arising from the life process are transformed into serviceable motor impulses in the scattered ganglions of this system. The central points of this system are distributed among the respective contractile structures.

Remark 3.—Since sensibility is a property of the nerve centers, which can be aroused only by a condition of excitation in a nerve fiber, in no case directly by the cause of the excitation, the apparent

1) So great is this darkness that Burdach, who has gathered with great diligence the appropriate pathological facts, remarks that experience has taught that there is no part of the brain whose abnormal condition has not effected a disturbance of mental activity; on the other hand, that there is no part whose abnormal condition has not left mental activity undisturbed.

paradox is explained, that direct excitation of the structure of the hemispheres produces no sensation in the soul; *i. e.*, that the seat of sensation is itself dead to sensation.

§ 10. POSSIBILITY OF INTERACTION BETWEEN BODY AND SOUL. FALSE VIEWS REGARDING IT.

The interaction between soul and body arises, in that the soul influences the molecules of the brain, and receives impressions from them. How is this possible, since soul and body as spiritual and material essences are fundamentally different? Although the answer to this question really belongs to metaphysics and not to psychology, yet we shall now disclose a few erroneous presuppositions which have surrounded the subject with needless difficulties.

One false presupposition is that cause and effect must be *similar*. Even within nature we often see the opposite, since, for example, motion is transformed into heat, electricity into motion, or into chemical results.

It is further erroneous to assume that, in the interaction between soul and body, dissimilars do work upon each other. Sense-concepts are only dissimilar to movements of matter, in that the former are inner, and the latter are outer states or conditions of real essences.[1] These real essences which lie at the basis now of concepts, now of material phenomena, are supersensible and do not form objects of experience. It would be hasty, therefore, to assume their total dissimilarity.

1) According to Herbart, the truly existing (the actual) consists of a plurality of simple essences, among which the soul essence assumes an exalted place without being fundamentally different from the others. The coördination of real essences (monads) is carried still further by Leibnitz, with whom all monads are, in a certain sense, representing substances; and even with Lotze, real supersensible essences, *similar* to the soul substance, lie at the basis of matter. "Body and mind are, in the customary acceptations of the terms, not totally unlike (disparate); they are different, but coördinate aspects of the notion of substance." (Med. Psych. p. 74.)

It is likewise an erroneous presupposition to think that interaction between the atoms of a material body is not enshrouded in as much darkness, and as far removed from exact knowledge, as the interaction between body and soul. All explanation of natural processes relates merely to the resolution of complex combinations of reciprocal actions into their simple elements, and to the proof of the mediations and connecting links upon which the natural process depends; but explanation reaches its end as soon as the simple and unmediated is reached. It is just as difficult to explain how an atom of sulphur acts upon an atom of quicksilver to make cinnabar, as it is to tell how the simple essences of the brain affect the immaterial soul so as to cause it to produce a concept.

Finally, the erroneous notion must be refuted, that, through the action of the body upon the mind, the external exciting causes as such are transmitted in unchanged form to the mind, so that, for example, light and color would exist without, as well as within us. All that the external exciting cause can do in this regard consists rather in the fact that it produces a sum of conditions under which the soul, acting according to its inner nature, is able to produce a certain parallel inner state called a CONCEPT, which answers exactly to these conditions. Outside of the soul, that, for example, which we call "light" is nothing but colorless and lightless vibration, having a certain wave length and a certain duration. These vibrations obey mathematical laws, and may therefore be studied by the blind. Within the soul, light is an original inner state, a concept which can not be defined, but only experienced.

§ 11. NERVOUS SYSTEM AND SOUL LIFE.

The nerves are conductors which mediate the intercourse between the soul and the external world. The sensory nerves

announce the occurrences of the external world to the soul in the form of nerve excitations. The soul translates the effect of these excitations into a language peculiar to itself—into sensations, because it is impelled by those qualitatively and quantitatively determined effects to create sensations correspondingly determined. The motor nerves are conductors for the impulses which, proceeding from the soul, cause the muscles of the body to execute peculiar movements, thereby fulfilling the Will of the soul, in that the Will is translated into actions and deeds.

The excitations of sensations which simultaneously and successively move along the nerves toward the central parts of the nervous system, are, for the most part, extremely complicated, and are compounded from numberless primitive impressions. For example, in seeing, every point of the field of vision; in touching, every elevation or depression of the surface which is felt; in hearing, every individual tone, exercises its peculiar effect upon the peripheral ends of the nerves. These manifold impressions come together in the central parts of the nervous system, where, through reciprocal interaction, they experience the first degree of elaboration and transformation, after which they first begin to affect the soul. The combination or synthesis of the single, primitive sense impressions into organized total impressions corresponding to the circumstances of the external world, is what may be regarded as the first service of the brain as the chief nerve center.[1)]

The motor impulses which are to execute the Will of the soul are, in any individual case, extremely complicated, since they usually affect a large surface of the muscular system,

1) This service is affected especially by space and time relations which are essentially supplemented by the assistance of the central parts of the nervous system. This space and time arrangement of nerve excitations is independent of the content of what is felt, and only dependent upon the combination of primitive impressions.

in order to cause the various muscles to carry out the desired movement. For this reason the mind of the infant is unskillful in the control of the apparatus for moving its body and in managing it according to its concepts. The desired skill is acquired only after many attempts which are first unsuccessful. Here, too, the central parts of the nervous system assist, since the motor impulses necessary to a combined movement are united into a single, or total state in the respective parts of the brain; so that only a single impulse is needed in order to produce the desired compound movement of the body.[1] The coördination of movements is ascribed particularly to the cerebellum.

In addition to the business of combining or synthesizing sensory and motor impulses into well-ordered totalities, or united groups, the brain has also the general function of attending and mediating the higher offices of the soul, by means of peculiar accompanying activities, which have thus far been but slightly investigated. This activity of the brain has been variously conceived and misinterpreted. Phrenology goes to the greatest lengths in this matter. It assumes that the various classes of soul activities may be localized in as many spatially divided provinces of the brain. Since these so-called *faculties of the soul* are nothing but abstractions without any real validity (§ 6), the fundamental view of phrenology must be characterized as baseless. In the life of the soul all factors play into one another, and all are mingled in

1) There exists here a great difference between man and animals. As a rule the animal body is adjusted to a certain predetermined typical form, calculated for a limited range of life conditions, while man's body is capable of adjusting itself to the most manifold conditions of life. So, in the brain of the animal, the necessary combinations of motor impulses for the execution of particular, and often very complicated and artistic movements, are so performed that the animal does not, like man, need to learn. The spider is from the first exceedingly skillful in spinning and running, but in nothing else. Man is, at first, unskillful at everything, but he may become skillful in everything by practice. With him education takes the place of instinct.

reciprocal determination and development. The elementary component parts of our consciousness, namely, sensations, must be distinguished from those mental products which are developed by training and culture. Only to the first, which are stored up by the memory as the original elements of soul activity, may be ascribed certain *localization* in the respective portions of the brain. It would, however, certainly be unjustifiable to assume localization for derived states of the mind; thus, for example, to assume special "organs of the brain" for cunning, bloodthirstiness, talent for fine arts, etc. These derived mental states are the result of a synthesizing of many elements of soul life, which is not brought about by the activity of the nervous system, but which is to be regarded as the peculiar function of soul life.

Even though these derived states of mind, for example, the phenomena of intelligence, of feeling, of will, are in no wise localized in particular material parts of the brain, yet they are significantly modified by the formal differences which the physiological resonance (§ 7) of the nervous centers exhibits. In this way one understands how a general excitability of the nervous system brings with it a disposition to powerful feelings and emotions, and how a cold-blooded nature would manifest itself in mental aspects different from those of a choleric nature.

We must, accordingly, content ourselves with the general fact *that mental states are accompanied by nervous conditions* (particularly cerebral conditions) which powerfully affect the mental life through their formal differences, that is, through the energy with which they appear and through the rhythm of their progress and subsidence, and finally through the combinations of states of excitation which happen to be established in the nerve centers, without, however, being able, under normal conditions, to exert a determining influence upon the soul life.

Remark.—The question as to the seat of the soul, which has not seldom been propounded, has indeed a meaning; for even a simple, non-spatial essence allows of place determination in space; but where this place is, and whether it is stable or variable, are questions which offer almost no starting points for anatomical investigations, since the expected convergence of nerve fibers to a single central place in the brain is not warranted by anatomy, and the symmetrically divided pair of hemispherical formations of the brain exclude at once the notion of unity. Instead of the expected crossing-point of the nerve fibers, which, besides, could not be a mathematical point, there may be presupposed a nervous PARENCHYMA as *sensorium commune*, in which the activities of the nerves, as well as th. static pressure, extend themselves through a fluid in all directions, s. at, no matter from which direction they come, they must meet the resident and sensitive soul. It is true that in the extension of this PARENCHYMA the direction of the sense impulse which is transmitted to the same by an isolated nerve fiber is lost; but, as we shall clearly see later, this direction as such is never an object of sense-perception, since all that transmits an impression to the soul consists of its individual and fixed quality, which can always communicate itself to the soul through the *sensorium commune*. This sensorium would be also the place in which the nerve excitations, coming from various sides, would enter into an interaction similar to that of concepts in the soul. Though certain physiologists locate the seat of the soul now in the pineal gland, now in other places, yet these views are, of course, founded upon mere hypotheses.

§ 12. RESULTS OF THE INTERACTION OF BODY AND SOUL.

In mental activity, the psychological resonance (§ 7) manifests itself in certain states, which are partly permanent or habitual, partly transitory, and partly periodically returning.

This is especially true in those formal differences (§ 11) of the nervous system in general and of its centers in particular, which determine the course and departure of the mental states in a double direction, namely, according to the degree of intensity (strength, liveliness) with which the men-

tal states appear, and according to the speed with which they depart.

The permanent quality of mental conditions in respect to intensity and excitability—as a result of the permanent characteristic of the nervous system—is called TEMPERAMENT. In so far as this degree of intensity and excitability in each person is a peculiar one, each has his peculiar temperament; thinking however of the external limits, four chief kinds of temperaments may be distinguished: viz., the CHOLERIC, with the maximum; and the PHLEGMATIC, with the minimum of intensity as well as excitability; then the SANGUINE, with much excitability and but little intensity; and the MELANCHOLY, with little excitability and much intensity. The choleric temperament is as much the opposite of the phlegmatic as the sanguine is of the melancholy.

Since, however, the intimate interaction of all organic processes of the body does not permit a separation of nerve life from the other organic functions, the other bodily organs and systems have a certain value for the soul. The permanent condition of the whole body so far as it has an influence upon the mind is called bodily temperament. The strong or weak constitution of the body, the health or sickness of its organs, the quality of the blood, and even the structure of the bones and the muscular system have their fixed value, not alone for the physical, but also for the spiritual life, and belong, therefore, to the bodily temperament. Secondarily, also, descent, climate, age, sex, etc., belong to the same in so far as they have an influence upon the physical and mental constitution of man. Therefore, not only individuals, but also families, nations, races, ages, and sexes, have their peculiar bodily temperaments. But it must not be thought that these influences rule, as if man were a product of his bodily constitution. On the contrary, with educated people, the superiority of the spiritual nature is shown, in that it devel-

ops contrary to the bodily temperament; thus, for example, an aged man may have the mental freshness of youth, and may still be cheerful even upon the sick-bed. Only the animal is governed by its bodily temperament. (The greedy wolf, the timid bird, the angry lion, etc.)

Very noticeable is the influence of the body, especially of the nervous system, upon the mind in the condition of sleep. This influence is a periodical, naturally recurring arrest of mental conditions and activities in consequence of the wearying of the cerebral nervous system in continuous activity of the sympathetic nervous system. Mental states during sleep are called dreams. They belong mostly to a condition of half-sleep. The partial restraint of the nervous system during sleep gives to our dreams their disconnected, peculiar, or absurd character, since the interaction of the concepts proceeds not according to logical and psychological, but according to physiological laws.

Herein sleep is a type of mental diseases, in which the healthy life of the soul is disturbed in a lasting and abnormal manner by bodily influences. The transitory conditions of emotions, of swooning, of intoxication, of narcosis, of magnetic sleep, of clairvoyance, and of trance, are calculated to show us still clearer and more strikingly the intimacy of the interaction between body and mind. These conditions will be discussed further on.

Remark.—The temperament changes with age, just as the vigor and excitability of the nerves change. The child, with its tender, sensitive bodily structure, inclines to the sanguine temperament; the youth, with his stronger but still sensitive nerves, is choleric; the man, with whom excitability has gradually subsided, becomes melancholy; while the dulled senses of the old man usually cause him to become phlegmatic. Still, there are phlegmatic children and sanguine old men, and temperament is not to be confounded with quality of character gained by psychological culture. Thus "philosophical phlegm" is compatible with a choleric temperament. The san-

guine and the melancholy temperaments are called the temperaments of feeling, since the former is peculiar to a cheerful and the latter to a gloomy state of mind. On the other hand, the choleric and phlegmatic temperaments are called the temperaments of activity, since the first is united with a superfluity the other with a want of mental activity. The view of Hippocrates regarding the origin of temperament through the mixing of four humors (blood, choler, phlegm, and melancholy), is of course antiquated.

III.

PSYCHOLOGY PROPER.

§ 13. THREEFOLD DIVISION OF PSYCHOLOGY.

Although the soul is a unit, yet, according to the testimony of experience, it is capable of a great multiplicity of states or conditions, partly simultaneous and partly successive, one to the other. These mental states may first be distinguished as *original* and *derived.* Original states are such as can not be derived from other states or conditions of the soul.

There are no inborn original states of the soul.[1] Only the capacity of the soul, under certain circumstances, to enter into the rich and minutely graduated process of development of mental life is inborn.

The consciousness of the new-born infant is a white sheet, a *tabula rasa*, which gradually fills itself with a definite content, in consequence of interaction with the external world.

Out of this interaction proceed the original mental states. These are the sense-perceptions, color and sound, smell and taste, physical pleasure and pain. They are the building-stones of mental life, with which all higher structures of the soul are built. Sensations are in soul-life what the elements are in chemistry or the cells in physiology. Of sensations, therefore, we must first treat.

1) John Locke was the first who denied the doctrine of Inborn Ideas. In this regard he gave direction to modern psychology.

Sensations are SENSE-CONCEPTS, by means of which we grasp the external world. They endure in the soul, even though the external excitations which produced them cease to act. They are still called *concepts in the more restricted sense*, for example, the concept of my absent friend, the concept in midwinter of the splendor of spring. Through the interaction of such concepts higher concept-structures are formed, in which the original are no longer to be recognized; as, for example, the concept of God, of virtue, of power, of number. This kind of concepts, which are also called general notions, ideas, thoughts, belong to mediated, or derived mental states.

Other derived states arise through the meeting of concepts in our consciousness, which no longer bear the characteristics of concepts, since with them it is no longer a question of WHAT is represented, but of HOW the mental activity proceeds. The mental states which are determined, not by the objective content of what is conceived, but by the subjective condition of the conceiver, are the various conditions of our FEELING and WILL. They come to the concept as a new element, like the exponent of a relation to the members of the relation, and always presuppose not only the juxtaposition, but also the interaction of several concepts. For instance, to the concept of a picture, there is united, as a subjective adjunct, a feeling of pleasure, or even the desire to possess it; so, at the sight of misery, we have the feeling of pity and the impulse to help.

These derived states of mind are in general distinguished as feelings and strivings, according as the passive or the active character predominates. From this arises the threefold division of psychology, into the doctrine of *concepts*, the doctrine of *feelings*, and the doctrine of *volitions*. (Knowing, feeling, willing.)

Remark.—The old psychology hypostasized the three chief notions of classification, *Knowing*, *Feeling*, and *Willing*, thus making them

real faculties of the soul. Aristotle is the father of the theory of soul faculties. His faculties are directly called the parts of the soul, but are related to mental activity as possibility to reality. Of faculties there are five: that of nourishment, of sensation, of desire, of locomotion, and of thought. We find the greatest extension of this doctrine in the modern philosophy of Wolff, and even with Kant the main features of this system are retained. The latter distinguished more sharply between feelings and strivings, and thereby laid the basis for the present customary threefold division of psychology. To the modern explanatory philosophy, which employs the *genetic method* (§ 6) especially, the faculties are only general class notions, used for guidance within the manifoldness of mental phenomena, but in no sense are they principles of knowledge for the explanation of these phenomena. Just as in physics, the specific *powers* of nature disappear, and natural *laws* gain ground, the further an explanatory knowledge of nature progresses, so in psychology do the manifold soul powers vanish, or maintain their places only as terminological names. Here, as there, true scientific progress consists in transition from explanations in *name* to explanations in *fact*.

PART I.

KNOWLEDGE.

CHAPTER I.

THE PRODUCTION OF SENSE-CONCEPTS.

§ 14. SENSATION.

A sensation is a concept,[1] *or perception of the soul, which arises from the transmission of an externally stimulated nerve excitation to the nerve centers, and, through their agency, to the soul itself.* A sensation is therefore in the mind, even though its effecting causes lie partly in the body, and partly in the external world.

We may distinguish the following stages in the production of sensations:

1. *The exciting cause.* This is a condition of physical motion, either of a ponderable material, as, for example, pressure, sound, molecular action; or of an imponderable medium, as with light. Sensations whose content is clear and distinct depend upon periodical, or oscillatory, movements.

2. *The attack of this physical condition of movement upon a sensitive part of the body*, either in unchanged form, as is the case with sound and light, where the oscillatory movement as such makes its attack upon the nerves; or in an altered form, when the peripheral ends of the nerves are

1) In this book *Concept* is a general term for any mental product. When used in a special sense, it is properly restricted.—*Translator.*

affected by the movement, not directly, but through a change in the bodily masses which are directly touched, as, for example, in the case of impressions from heat.

3. *The condition of excitation in the sensory nerve fibers*, which was awakened by the external exciting cause, and which we have characterized as a negative vibration of the nerve current (§ 8). This condition of excitation is a purely physical inner nerve process, which has no kind of similarity to its external producing cause, nor to the sensation to which it leads. It would seem, rather, that these conditions of excitation in different nerve fibers, as modifications of a common principle, namely, of their electrical aspect, are more related to one another than to their external exciting causes, which differ considerably in kind.

4. *The transmission of this condition of excitation of the nerve fibers to the nerve centers and finally to the brain as a center of the highest order*, in particular to those parts of the brain which men are inclined to regard as the seat of the soul (sensorium commune). In this process the condition of excitation in the nerve fiber experiences another and final transformation, because it here meets with numberless other conditions of excitation which have been conducted by separate nerves, and which modify one another according to the measure of their strength and opposition. Only in this changed state does the excitation succeed in affecting the soul. In this total impression it may happen that individual excitations are completely lost, and fail to reach the soul. Thus is explained the fact that at times we do not see or hear, though light and sound waves are exciting our nerves of sensation. (Sleep, swoon, unrecognized sensation.)

5. *The last stage of this process is the sensation itself*, which the soul creates in consequence of the antecedent occurrences. It is not a *copy* or image of the external thing, but an *answer* to the excitation which proceeded from it; an

answer, indeed, in the "concept," the language peculiar to the soul. Only from the fact that the same external things bring about the same sensations in the soul, do concepts become transformed into "signs," from which we may conclude as to the presence and relations of the external world.

Remark 1.—The sensation as inner state of the simple soul essence is a witness to the spontaneity of the soul, which has been awakened by the preliminary processes; the sensation is by no means carried into the soul from without, but is created from within, and it is in no wise comparable with the physical exciting cause. The application of sensations to the intelligent apprehension of the external world does not mean, therefore, that the sensations represent or image the qualities, but rather the *relations* of qualities or of external events, for the relations which are established among the sensations are analogous to those which exist among the external events which gave rise to them. This occurs when we perceive the manifold, the single; the near, the remote; the large, the small; the strong, the weak; the slow, the fast, etc., as they are in reality.

Remark 2.—The superficial conception of our cognition inclines to the assumption, that by means of sensations we directly grasp the qualities of things in the outer world. This is not the case. Between the rate of vibrations producing a tone and the content of the tone-sensation, there is no connection; and a careful analysis of color reveals no relation between the color on the one hand, and the length of wave and the rate of vibration in an elastic and imponderable medium on the other. Only science succeeds, by indirect means, in establishing these relations, of which the ordinary mind has no conception.

§ 15. CONTENT, STRENGTH, AND TONE OF SENSATION.

There are three things to be distinguished in a sensation; viz., *content, strength, and tone.*

By *content* is meant the *qualitative* determination of the sensation in regard to the nature of the exciting cause. Difference in the content of sensation corresponds to the "specific energies" (§ 19) with which different sensory nerves

respond to outer excitation; whereas, different excitations within the same department of sense correspond to mere contrast in the content of sensation. Hardness and taste, sound and color give different sensations—individual tones and individual colors produce among themselves *contrasted* sensations.

By *strength* is meant the *quantitative* determination of the sensation in regard to the magnitude of the exciting cause. Greater excitants produce stronger sensations (§ 16). Without experiencing any change in its quality, the sensation passes through a whole scale of quantitative changes, which correspond to the increase in the intensity of the excitant, its nature remaining unchanged. According to the measure of this increase, the sensations from one and the same class of excitants fall into a series of continually increasing intensity, as in weight, temperature, strength of tone, and degree of light.

Content and strength are only different sides of one and the same indivisible sensation, having their source in the conditions of the external stimulus (rate and length of vibration in sound). To these there is added, in many classes of sensations, still a third—the *tone*. By the *tone* of a sensation we understand the agreeableness or disagreeableness of the same, through which it announces to our consciousness "the measure of agreement or of conflict between the excitant of the sensation and the conditions of life," that is, its disturbing value for the totality of the life process. The sensation is pleasurable or painful according to the functional disturbance which its exciting cause calls forth; *i. e.*, according as it furthers or retards the bodily welfare. When the lungs are highly heated, a cooling drink is pleasant, since it brings a momentary benefit by removing the excessive dryness, even though it should prove injurious in the end.

The strength or intensity of a sensation, or of a concept in general, is figuratively represented by its elevation above an ideal surface called the THRESHOLD OF CONSCIOUSNESS.

Remark 1.—The contrast which arises in the content of sensations makes it possible to distinguish them easily, producing clearness in the single sensation and distinctness in groups of sensations, since we are able to distinguish the elements of the group from one another. The distinctness of simultaneous sensations is favored by the insulated course of the primitive nerve fibers; that of successive sensations by the capacity of nerve fibers to distinguish successive impulses. The running together of the nerve fibers is the cause of the obscurity of groups of sensations. This obscurity is greatest in the sphere of bodily sensations, which extends over the whole surface of the body.

Remark 2.—In order to explain the tone of a sensation, one must regard the nerve process called forth by an outer excitant, not as isolated, but as in interaction with the other nerve excitations, whether occurring in a nerve center or in the general "sensorium." The single nerve irritant finds the nerve fibers and centers in a certain *tension*, resulting from a plurality of excitations which flow together there. This tension suffers a certain change on account of the new stimulus. According as the present degree of tension is elevated or depressed by the new excitant, the sensation appears to consciousness as pleasant or painful.

§ 16. THE RELATION BETWEEN STIMULUS AND SENSATION. THE PSYCHOLOGICAL LAW.

When magnitudes are compared, three things must be distinguished in the process of producing sensations: (a) the external stimulus; (b) the degree of nervous excitation; and (c) the sensation itself.

Of these three magnitudes, only the first is accessible to exact measurement; light-stimuli, tones, weights, temperatures, solutions of things which may be tasted, can be objectively measured. With regard to the sensation itself, the single degrees can not be exactly distinguished, though at least two states of the same may be; viz., the condition in which the sensation is just noticeable, *i. e.*, the zero point or threshold value of the sensation; and the second, that in

which it experiences a noticeable increase of strength, or intensity, *i. e.*, its value in marking difference. The comparison between stimulus and sensation must proceed from these two states, which may be subjectively fixed.

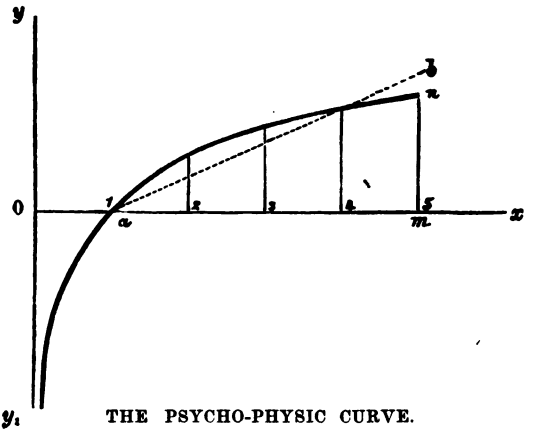
That as a rule the intensity of the sensation increases and diminishes with that of the stimulus is a principle well established by experience. When a sound or a light-stimulus or a weight pressing on the hand increases, we perceive that our sensation also increases. It has been hastily concluded, therefore, that the intensity of the sensation is proportional to the intensity of the stimulus.

This is, however, not the case. For example, let a certain sound continually increase in strength from zero; we notice that the stimulus is present with a certain degree of strength without there being subjectively any sensation present. We do not hear the ringing of a far-distant bell, because the vibrations of the air (sound stimuli) become too greatly weakened in passing over the long distance to our ear. Only when the stimulus has reached a certain degree does a sensation appear.

This degree of the stimulus at which its noticeability just begins, that value of the same which corresponds to the zero point of the sensation, we may, with Fechner, name the THRESHOLD OF STIMULUS. It is the lower border of stimulus, below which there would be no sensation. On the other hand there is also an upper boundary of stimulus, beyond which an increase of sensation would be impossible; this may be called the SUMMIT OF STIMULUS.

The sensation begins then, not with the infinitely small, but with the *threshold* value of the stimulus, and its growth ceases entirely at the *summit* of the stimulus. (See Fig. 1, on next page.)

(FIG. 1.)



THE PSYCHO-PHYSIC CURVE.

o x, Axis of abscissas of the stimulus.

y y^1, Axis of ordinates of the intensity of the sensation.

a, Zero point of the sensation, corresponding to the stimulus equaling *o a*.

o m, Summit of stimulus.

Near *a*, the sensation increases rapidly with the stimulus; near *m*, slowly.

The negative ordinates to the abscissas from *o* to *1*, signify stimuli of which we are not conscious.

a b, Line of proportional growth, in order to show the deviation.

o a, Measure of sensitiveness to stimuli.

If now within the compass between the threshold and the summit of stimulus, we gradually increase the stimulus, we notice that not every increase effects an increase of sensation; the increase of stimulus must reach a certain degree, *the threshold of distinction*, in order to be noticeable.

This last is, however, not a constant magnitude, but is dependent upon the degree of stimulus, and relativity of sensation already reached. The higher this degree already is, the larger must be the addition to the stimulus, in order, noticeably, to increase the sensation; *i. e.*, the more removed

is the threshold of distinction. In short, one may say, The threshold of distinction of a stimulus is proportional to the strength of the stimulus.

This principle, originally empirically proved by Weber, and later confirmed and more exactly construed by Fechner, is called THE PSYCHO-PHYSIC LAW.

This law has, within certain limits, been verified in the various departments of sense, as well for *intensive* stimuli, such as oppression, weights, temperatures, height of tone, strength of light, as for *extensive* magnitude of stimuli. For instance, the heavier a weight held in the hand is, the more I must increase it, in order to have a noticeable increase of the sensation.

From the foregoing the following principles may be deduced:

1. The threshold value of the sensation is a constant magnitude; viz., zero; it is the zero point upon the scale of sensation.

2. The threshold value of the stimulus, or point of perception is with the same individual under the same circumstances a constant magnitude, yet one differing from zero. (*O a* in Fig. 1.)

3. With different individuals and under altered circumstances, however, the point of perception of the stimulus varies. The sooner it is reached, *i. e.*, the more the threshold of stimulus (o) approaches that of sensation (a), the greater is the man's sensitiveness to stimuli. If, for example, the threshold of sensation lies at stimulus 1 in one person and at 2 in another, the sensitiveness in the first case is double that in the second; *i. e.*, the sensitiveness to stimulus is proportional to the reciprocal of the value of the stimulus.

4. The distance between points of discrimination in a sensation is constant, because infinitely small; the distance between points of perception in the stimulus is changeable;

that is, in the terms of the psycho-physic law, is proportional to the strength of the stimulus itself; in other words, the greater the stimulus already is, the more it must grow in order that difference in sensation may be perceived.

5. The increase in the sensation is slower than the increase in the stimulus. More exactly, while the strength of the sensation increases only in an arithmetical ratio (as, 1, 2, 3, 4.....), that of the stimulus grows in a geometrical ratio (as, 1, 2, 4, 8, 16.....). This is most clearly perceived in tones, where the second octave above the key-note corresponds to the tone value 4, whereas upon the musical scale of our sensations and upon the piano, which is correspondingly arranged, this tone appears to be threefold the key-note.

Remark 1.—The increase of sensations stands to that of stimuli as logarithms to numbers. While logarithms increase arithmetically: 1, 2, 3....., the corresponding numbers increase geometrically; viz., 10, 100, 1000..... In the first, the constant difference is 1; in the second, the constant quotient is 10. Nevertheless, one may, within narrow limits, posit the increase of the logarithms as proportional to that of the numbers, as actually happens in the process of interpolation. Just as for each sensation there is a threshold value of stimulus (*o a*, Fig. 1) which coincides with the zero point of sensation (*a*, Fig. 1), so in the number series (1, 2, 3, 4,.....) there is a point lying above zero which corresponds to the zero point of the logarithm. This number value is unity, for log 1 = 0. Since, therefore, logarithms and numbers show relations analogous to those of sensations and stimuli, Fechner proposed for the relation between sensation and stimulus the following formula:

$$\gamma = k \log \beta,$$

i. e., the sensation (γ) is not absolutely proportional to the magnitude of the stimulus (β), but to the logarithm of the same. From the foregoing formula follows through differentiation,

$$d\gamma = k \frac{d\beta}{\beta}$$

which is the mathematical expression for Weber's law.

Remark 2.—The fact of the threshold of sensation secures to us a certain physical insensibility, and consequently a certain independence of the numberless minute stimuli which constantly buzz about us, and which, without this fact, would be a source of constant discomfort. The distance between points of discrimination, on the other hand, secures to the sensations which appear in consciousness a certain constancy, since it frees them from the oscillations of the stimuli. The pleasing impression of a harmonious piece of music essentially depends upon the fact that we do not hear the minor deviations of the tones from tune and score, because they fall between the points of discrimination. "Threshold value," and "points of perception and discrimination" are expressions for sensibility to stimuli and their differences, and as such are very different, not only with different persons, but also from time to time, according to the measure of habit, weariness, practice, agitation, depression, etc.

Remark 3.—The law of Bernoull, which is more than one hundred years old, forms an interesting side-piece to the psycho-physic law. It expresses the relation between the objective worth (price) and the subjective valuation of a piece of economic property as follows: The subjective satisfying value of an objective quantity of property is inversely proportional to the amount of the same goods which is already possessed. The effect of a dollar to a man is smaller in proportion to the number of dollars he already possesses.

§ 17. THE TWO CHIEF CLASSES OF SENSATION.

Sensations are divided into two main classes according to the nature of the nerve fibers, particularly according to the manner of their course and peripheral ending, and further according to the peculiarity of the object to which the content of the sensation relates. They are the inner sensations, or those arising from the body; and the outer sensations, or those arising through the senses.

There are sensory nerves, which, without ending at the periphery of the body with special apparatus for the perception of the stimuli of sensation, spread themselves all over the surface of the body and its inner cavities in ever finer

ramifications, and almost exclusively terminate in the spinal cord; there are also sensory nerves whose peripheral ends terminate with peculiar organs, intended for the favoring of a specific class of stimuli, and which mostly, after a short course, terminate directly in the brain.

But the object also to which the sensation relates is different with the two classes of nerves. The nerves which bring about the general sensibility of our body, and enable us to distinguish it from other objects, bring to consciousness only our own bodily condition, even though the sensation be caused by external things; as, wounds, and climatic or atmospheric effects; the sense nerves, on the other hand, which are designed to bring about our knowledge of the outer world, bring to consciousness external phenomena, even though these nerves are stimulated to their function by the action of those phenomena upon sensitive places upon the body.

These two classes of sensation are also distinguished in CONTENT and TONE.

The content of sense-perception or sensation, is characterized by greater clearness; the muscular sensation by greater obscurity.

Sensations arising from the senses group themselves into series according to the measure of their similarity and their difference, whose members, especially with the higher senses, form a well ordered scale. The insulated course of the nerve fibers, as well as the independence which one excitation has of another, favored by the structure of the organs of sense, makes the distinction possible. These organic arrangements are lacking for the muscular sensations. With them many simultaneous sensations become united into a more or less obscure general impression, on account of the even distribution of stimuli of sensation over whole regions of sensitive body surface, as well as on account of the intimate reciprocity between the parts of the organism.

The two chief classes of sensations are distinguished in *tone* in the fact that muscular or bodily sensations mostly have tone, whereas the sensations arising from the senses are mostly without tone, or but slightly affected by it.

Sensations from the higher senses particularly are, for the middle degrees of strength, almost entirely without tone. In the chemical senses of smell and taste there is, indeed, a distinct marking of tone, wherein these perceptions approach the muscular sensations.

Remark.—If we conceive the tone of a sensation as an expression for its disturbing value in reference to the totality of the organic life, it appears comprehensible that the perceptions of sense are almost without tone, for with them the disturbance of the organic life effected by the nerve stimulus, is reduced to a minimum on account of the greatest possible isolation of the nerve excitation; whereas a greater or less disturbance of the organic life lies at the basis of the muscular or bodily sensations, which are directly produced by organic changes of the body. The sensations freest from tone are those of the eye; the eye is, however, an organ which has the greatest relative independence.

§ 18. SENSATIONS OF THE BODY.

Body-sensations arise when the organic changes of the body which accompany the life process or which are excited in the body by external causes, are conveyed to the brain and thereby brought to consciousness. They are especially marked by tone,—agreeable in the case of full bodily health, painful where there are physiological disturbances. (§ 15.)

The life process is an unbroken series of changes within our body. Circulation of the blood, respiration, digestion, and excretion bring about a perpetual change of matter within our bodies. The mind is made aware of this process by the general body-sensation of animal heat, of hunger or

satiety, of moisture or dryness (thirst as dryness of the palate), of muscular tension or weariness, of free or labored breathing, etc.

The wealth of sensations arising from the body is extraordinarily great. It is commensurate with the broad surface expansion of the sensitive nerve tissue, and its constant excitation by the never wholly pausing life process. It is not conceivable that, with the immense peripheral development of the nerves of the skin, every single impression should be conveyed along an insulated track to the brain and to the mind; but there must rather be a uniting of the single excitations in the larger nerves and in the nerve centers, where the many inflowing nervous impulses unite into one great stream. The momentary average of this stream exhibits the general or vital sensation. The faculty of perceiving body-sensations may be called *the vital sense.*

In vital sensation, the largely contradictory content of the uniting sensations is more or less canceled by their synthesis, hence their characteristic *obscurity.* On the other hand, the predominating individual tones of the elementary sensations unite into a strengthened totality of tone, which we perceive either as physical enjoyment of life or as physical discomfort.

By means of this life-sensation, we have in every instant of our existence, not only the consciousness that we live, but also how we (physically) live, so that this sensation has not unfitly been called "*the barometer of our life process,*" or "the vital conscience." We have in particular the sensation that we maintain the equilibrium of our body, that we digest and respire, that we contract or relax the muscles, that the blood circulates in us, etc.

Vital sensation forms the obscure background upon which single local sensations are distinguished in strength and tone, yet they can be but imperfectly distinguished; it is not easy

for us to compare muscular sensations after the manner of sensations arising through the senses, to arrange them in series according to graduated contrasts, and to characterize them by names of exact significance. The metaphorical terms, *oppression*, *stinging*, *burning*, *pricking*, etc., by which we seek to characterize our muscular sensations, are of course indefinite.

Muscular sensations proper form a specific class of body or organic sensations. These arise from muscular activity at the peripheral ends of a sensory nerve, by which the mind is made conscious not only of the presence of movement, but also of its kind and degree, so that in these sensations we possess a sort of muscle and force sense. (Comp. § 35.)

Sensations arising from the body have this peculiarity, that we can not rid ourselves of them through the removal of their exciting cause, for this cause is our own body. [1] They are constantly above the threshold of consciousness and fuse with all other mental states. Herein is seen their importance in the process of mental life, and also the necessity of making ourselves independent of them by becoming physically hardened.

Remark 1.—Even the changes of those organs and systems which control the sympathetic nerves, and which consequently are not immediately accessible to our consciousness, make themselves indirectly perceptible, since the excitations of the sympathetic nerves are transferred to the neighboring off-shoots of the cerebral nerves. Thus the excretory and digestive processes are at least indirectly placed under the control of consciousness.

Remark 2.—Muscular sensation as reflex is the opposite of reflex action. By the latter, sensation is converted into motion; by the former, however, motion is transferred into sensation. The first process takes place in a center, the second at the periphery. Muscular

1) The anæsthetic or sensationless state occurs temporarily in deep sleep; it can, though incompletely, be produced by narcotic means, but never without serious danger.

sensations are of the greatest importance, because they adapt movements more and more exactly to the ends designed, and subordinate the motive apparatus of our body completely to the rule of the Will. They reinforce the effectiveness of the senses, for they mediate the finest adjustments of the organ of sense used in seeing, especially of the eye-ball.

§ 19. SENSATION ARISING FROM THE SENSES.

The peripheral ends of the sensory nerves stand in connection with peculiar and wonderfully constructed contrivances, whose function it is to allow a particular class of stimuli adequately to affect the sensitive nerve ends to the greatest possible exclusion of all other stimuli. These contrivances, which at the same time form the out-works of the soul, are called the organs of sense. The papillae of the sense of touch, the organs of tasting and smelling, the ear and the eye belong here. The sensations arising from one sense are unlike those of every other sense in kind, and are wholly incomparable with them; as, sound and light, temperature and smell. Each sense has its own peculiar speech in which it answers to all external stimuli, even to those which are inappropriate to it, and not adapted to the structure of its organ. A blow upon the skin causes pain; upon the eye, light; upon the ear, sound. The electric stream arouses the tongue to a sensation of taste, the eye to one of light, the ear to one of sound. The same sunbeam which produces light in the eye, brings to the skin a feeling of warmth.

This peculiarity of the nerves of sense according to which they always respond in the same way to all stimuli which affect them, has been called the *specific energy* of the senses. The ground of explanation for this can evidently lie either in the condition of excitation in the sensory nerve fibers, or in the manner of their peripheral and central ter-

minations. Since the state of excitation of a nerve fiber in all kinds of nerves rests upon the same principle, namely, upon a negative vibration of the stream of nervous force (§ 8), the specific peculiarity of a sensation can in no wise lie in the nerve fiber itself.[1] It is imparted to sense impressions, partly by means of the peculiar terminal structures in which the sensory nerve branches out, partly by means of the conducting nerves, which must lead to the nerve centers before consciousness can be reached.

Under the microscope, these terminal structures of the sensory nerves exhibit a most admirable mechanism, whose purpose is to fit these organs to the peculiar form of stimulus for which they are adapted. This adaptation is effected by the entrance of the terminal nerve fibers into cells, whose forms assume a various character according to the character of the external stimulus. The cortical organ of the ear, and the retina of the eye are examples of the terminal structures of the sensory nerves.

Remark 1.—The sensory nerves, also, in this respect appear similar to telegraph wires, with which they have so often been compared, in so far as it is the same stronger or weaker electrical stream which moves over the wire, and which, according as it is placed in connection with this or that terminal apparatus, brings telegrams, decomposes water, explodes mines, etc. In the same way, the state of excitation of a nerve fiber may, according to the different kinds of apparatus between which the nerve extends, produce sensations of light or heat, movements or gland discharges.

Remark 2.—Where the external stimulus touches, not the sense organ but the sense nerve, the specific sensation of this sense is not aroused in the mind. The same degree of temperature which, affecting a nerve through the skin, would produce the sensation of cold, does not produce this sensation, but that of pain when it affects the

1) In recent nerve physiology, this fact is called the *functional indifference* of the nerves. It has essentially modified the original theory of "specific energy" proposed by Johannes Müller.

nerve direct. The ray of light which, falling upon the optical apparatus, produces sight, does not produce sight when it comes in direct contact with the optic nerve. The optic nerve is blind at its point of entrance into the eye. This fact confirms the foregoing explanation of the "specific energy" of the several sensory nerves, for the "specific energy" is explained as dependent upon the nature of the organ of sense. With the absence of a specially constructed organ of sense in the skin, there is also lacking this "specific energy," for these nerves react variously according to the various classes of stimuli (burning, tickling, pressing, pricking, etc.).

Remark 3.—The notion of sense and the fivefold division of the same is by no means so final as we are perhaps inclined to assume. If to a given sense a special organ belongs, the sense of touch is already placed in question, unless we regard the papillae as such an organ. On the other hand, one might feel bound to assume a series of other senses coördinated to the sense of touch; as, for example, a muscular sense, a respiratory sense, a digestive sense, etc. These groups of sensations have been classed with those arising from the body, without having been accorded the dignity of independent senses. It is essential, further, that the apparatus of sensation have a specific energy and that there be a certain isolation of the stimuli, in order that the sensation be distinguished from the broad stream of general but obscure vital sensations, which is not always the case with muscular sensations, and those of respiration and digestion. (Duttenhofer: "The eight senses of man," four of which are ascribed to the head, and four to the body, the latter being sense of the skin, sense of touch, sympathetic sense, and genital sense.) We speak finally of a sense of time, of space, of form, of number; but this is only in a secondary, or derived significance; for the conceptions of time, space, etc., belong, not to original but to derived mental states.

§ 20. SENSE OF TOUCH.

We ascribe to the sense of touch those sensations which arise from the contact of the skin with foreign bodies, provided the sensation does not rise to pain through excess of stimulation. A foreign body produces its effect through pressure, which brings about a molecular change in the skin covering, or the organ of touch. Change of temperature oper-

ates in a manner similar to external pressure; for the increase or decrease of warmth which penetrates the skin causes extensions and contractions of the skin, which are not unlike the results of mechanical pressure. The specific energy of touch, by which it is distinguished from sensations originating in the body, consists in reaction against the molecular changes of the minutest parts of the skin, produced by pressure and temperature, thereby bringing to consciousness the differences between hard and soft, fluid and solid, smooth and rough, dry and moist, heavy and light, cold and warm, and all their manifold degrees.

The passive state of being touched must be distinguished from active touching, in which the muscular sensation assists (§ 18), since we exercise a certain resistance to the external pressure.[1] This is increased when the organs of touch (in most cases the tips of the fingers) move along over the surface of the object to be touched.

The content of the sensation of touch is not alone conditioned by the touching object, but also by the place of contact upon the skin. The same contact produces a different sensation according, *e. g.*, as exerted upon the right or the left arm. A needle prick on the toe is, even with closed eyes, distinguished from one on the back. This distinction would be impossible, were the sensations identical as regards their content.

In the content of the sensation of touch, therefore, there lies not only an indication of the object of contact, but also of the place of contact. The latter indication, which puts

1) How greatly sensitiveness of touch is increased by active touching has been numerically established by Weber in his interesting experiments with the smallest weights which we can distinguish by means of the hand. In the case of passive touch, where weights press upon the hand when resting upon the table, the increase of weight must be nearly half that already resting upon the hand in order to be perceived; in active touch where the weight is held freely in the hand, an increase of one-seventh was noted.

us in condition to refer every impression of touch to a particular location on the skin, we call the *local sign* of the sensation. Since the whole sensitive surface on account of constant contact with clothing, air, temperature, is constantly in a certain state of excitation, and since each excitation brings its local sign with it, we obtain through the sense of touch a cognition of the geometrical boundary of our body, whereby the sense of touch becomes a sense of location.

The delicacy of the sense of touch is manifested in the ability to distinguish places on the skin lying in close juxtaposition by means of the local signs of their sensations of touch, and to hold them in consciousness as sundered. This delicacy varies greatly with the different regions of the body surface. For every portion there is a smallest distance within which two neighboring impressions of touch can no longer be distinguished, but fuse into a single sensation. This smallest distance is measured by the distance between the two blunted points of a compass placed upon the skin, and is in inverse proportion to the delicacy of the sense of localization. According to Weber's exact measurements, it amounts to one millimeter for the most sensitive parts of the skin; namely, upon the tip of the tongue and the tips of the fingers, while for the middle of the back it amounts to sixty-eight millimeters, so that this part of the body is only one sixty-eighth as sensitive as the tip of the tongue. He explains this phenomenon by saying that all places upon the skin within whose compass the two points give but a single sensation, are subordinated to one and the same primitive nerve fiber.

Remark 1. The local sign for touch seems to lie in the accompanying sensations, which appear to have their ground in the extension of the stimulus beyond the point of immediate contact, that is, in an irradiation of the physical excitation. The character of this accompanying sensation varies in the different parts of the body according

to the structure supporting the skin, and according to the surrounding wealth of nerves. The difference in the structure of the organs of touch becomes of essential importance to delicacy of touch, since by change in structure, in support, etc., they favor the manifoldness of accompanying sensations. (Significance of the nails as backing, or support, for the finger tips, as well as their irregular arching, for delicacy of touch.)

Remark 2.—The hand, many membered, highly movable, and furnished with the most delicate sensory nerves, may be regarded as the real organ of touch. The finger tips are the eyes of touch, which with the blind actually take the place of the real eye. The sensitiveness of touch is transferred from the hand to the instrument with which we touch external objects. Think in this connection of the staff of the blind man. The use of knife and fork, of knitting and darning needles, of the probe in surgery, the guiding of the pen in writing, the pencil in painting, etc., rest essentially upon the resistance which these tools experience at their outer ends from the external things, and which is communicated to the hand through the elasticity of the instrument. When we walk, the soles of our feet touch even through the shoes.

§ 21. THE CHEMICAL SENSES.

The specific energy of taste and smell comprises that department of chemical reaction in which these senses are divided in accordance with the subdivisions, liquid and gas.

The chemical senses are distinguished from touch, which is in the main a mechanical sense, in that the general covering of the body passes over into the organs of these senses, that is, into a mucous membrane in the cavities of mouth and nose. The mucous membrane of the mouth, favored by the discharge of the salivary glands, dissolves substances which may be tasted, and thus makes their chemical action upon the ends of the nerves possible.

Both taste and smell operate as practical senses, since taste stands in immediate relation to eating, and smell, to

breathing. Both are accompanied by muscular and touch sensations, and, like these, are characterized by indistinctness of content, and by lack of vigor in tone.

The part that these two senses contribute to our theoretical knowledge is so small, that our perception of the world would lose little in distinctness or coloring should the impressions given by taste and smell be dropped out of it. Since, then, these senses serve the economy of animal life more than they do a knowledge of the external world, we need not be surprised to find them in part more keenly, if less symmetrically, developed in the animal world than in man. For this reason they are called the lower senses.

The sensations arising from these senses manifest a variety of qualitative differences, to which, however, something individual and subjective always clings, so that we are not able to arrange them in a graduated scale. There can be no dispute about taste, and smells are characterized by their manifold peculiarities. To seek to construct a prismatic color-spectrum from sweet, sour, bitter, salt—or a musical scale from smells, must always remain a vain attempt. And for a conception of the outer world as regards space and time, these senses assist but little; for, on account of the extension of the outer stimulus over a great number of nerve fibers, the sensation, though having a certain breadth of impression analogous to temperature, by no means furnishes a separation of the manifold according to space and time.

Remark 1. The sensations of taste are capable of great cultivation (gormandizing); and those of smell, of great strength or acuteness. Both depend upon the divisibility of matter. The appearance of an effect at a distance arises, in the case of smell, from the fact that the volatile elements of odorous matter spread out through the atmosphere. That which supplies these senses has something really material about it, for a consumption of the object takes place in each case, though only in homeopathic amounts in that of smell. Taste is in this respect much more effective than smell. Both senses are

mediators of the agreeable and the disagreeable, but by no means interpreters of the beautiful or the ugly. The grosser sensuality of man prefers, therefore, to act upon these senses, and men seek to heighten the effect by eating and drinking, smoking and taking snuff. The cooking art studies the sense of taste, but purely in an empirical way; there is not a single universally accepted principle in this department, and the art is compelled to make the greatest concessions to subjective preference and traditional custom. There is no æsthetics of the art of cooking. Just as the sensory nerves of taste and smell are not easy to separate from nerves of touch, and the physiologists contend as to whether there are any specific nerves of taste, so the sensations from these senses are so modified by those of touch, of temperature, and of the body, that it is difficult to determine their pure quality,—a subjective somewhat always clings to them.

Remark 2. The well-known biologist, Gustav Jaeger, has recently felt himself obliged to ascribe to the sense of smell an extensive rôle in the economy of life. According to him, there is a specific odor which spreads through the air, not only for whole classes of animals but also for every individual, by which their sympathies and antipathies are determined, and their instincts as to food and reproduction are guided. When this same writer in his work, "The Discovery of the Soul," goes so far as to try to prove that the seat and essence of the soul (!) are found in certain materials of smell, this "discovery" is hardly to be taken in earnest.

§ 22. HEARING.

The specific energy with which the nerve of hearing answers to external stimuli is sound, although by this term is also meant, not alone the sound sensation (analogous to "heat and light"), but also the objective cause of the same.

The adequate form of stimulus for the sense of hearing is found in the rapid, periodical motions of the minutest parts of an elastic sound-producing body, which are, as a rule, transmitted through the air in the form of waves, until they reach our ear.

A periodical movement is one in which that which is moved returns to the same phase of motion at exactly equal time intervals. If this motion is slow, it may be followed by sight or touch, as in the case of the pendulum, the vibrating cord or bell. If it is too fast, these senses may recognize the presence, but not the individual elements of the movement; as, for instance, the diminishing vibrations of a sounding string by the eye, or the vibrations of a sounding board by the hand. Nature has given us in hearing a special sense, by which we are enabled to distinguish with wonderful exactness the three constituting characteristics of the one element of this motion.

The three characteristics by which this one element of periodical motion, viz., the *vibration* or *oscillation* is marked, are as follows:

1. The duration of the period, or of the time interval, between two successive and precisely similar phases of movement of the vibrating atom. This duration conditions the frequence of vibration, which is objectively measured by the number of vibrations to the second, but subjectively, on the other hand, through the specific energy of the sense of hearing, and is brought to our consciousness as height, or pitch, of tone.

2. The amplitude of vibration, or the greatest remove of the vibrating parts from the position of rest. This is subjectively recognized as strength, or intensity of tone.

3. The form of vibration, or the manner in which the motion, having the same duration and amplitude of vibration, is, within a period, transmitted (in a straight line, in a circle, in an ellipse, etc.). The peculiarity of form of vibration is subjectively noticeable in the *timbre* or *tone-color*, by means of which two equally high and equally intense tones may yet for our ear be sharply distinguished from each other.

In hearing, we perceive either noises or musical sounds. The first are irregular, the latter regular combinations of the elements of a periodical motion. The simple sound produced by vibrations with precisely similar periods, is *tone.* The combination of several single tones, the number of whose vibrations are all small multiples of a ground tone fundamental to them, and which, therefore, so completely fuse with one another, that they unite for our ear into a single total sensation of a determined quality, produces the musical sound. The elements of a musical sound are called partial tones; the main tone is called the ground tone, and the higher tones, its overtones. The notes of musical instruments are not tones in this scientific sense, but musical sounds.

Hearing is an analyzing sense, in so far as it is able to resolve a mass of compounded musical sounds into their individual component parts, as Helmholtz, in particular, has proved from the mechanics of auxiliary tones by the application of instruments of resonance exactly graded in pitch.

Remark.—The ear consists of a finely arranged system of diminutive parts:—the tympanum, the chain of minute bones, the liquid of the labyrinth, the various parts of the cochlea. These have the function of transmitting the oscillations produced by the sound-originating body and transmitted through the air to the peripheral ramifications of the auditory nerve in the labyrinth, by means of corresponding vibrations. The auditory canal which terminates the outer ear transmits chiefly only those vibrations whose amplitude is parallel to the direction of its length, and which therefore stand perpendicular to the tympanum, thus setting this as well as the connected system of bones, and mediately the elements of the labyrinth, into corresponding stronger or weaker vibrations according to the magnitude of the amplitude. Herein is explained loudness, or intensity of sound. The height of the tone is conditioned by the frequence of vibration, which falls upon the mind immediately as a time determination. To have explained timbre or tone-color objectively through the form of the vibrations, and subjectively through the physiological structure of the ear, is a merit of recent investigations concerning this sub-

ject, with which we associate the names, G. S. Ohm, Fourier, Wagner, and others, but especially the name of H. Helmholtz. (Helmholtz's classical writing, "Doctrine of Tone Sensations," 2nd edition, 1865.) According to this we obtain a perception of timbre, in that the ear, even with compound sounds, separates the periodical movement of the mass of air in the auditory cavities, which proceeds in a single direction, into a sum of pendulum-like vibrations, just as this division by means of a mathematical fiction is carried out in our understanding; and in that these simple vibrations are brought to our consciousness as simultaneous partial tones of the sound. This explanation presupposes that the ear is capable of conveying to consciousness different tones as simultaneous and yet distinct from one another. Whereas it was formerly assumed that all primitive nerve fibers were always in the same state of excitation, the investigations of Helmholtz have led to the assumption that the sensations of tones of different pitch are associated with the excitation of different primitive nerve fibers. This excitation is effected by means of microscopic cortical fibers lying upon the walls of the cochlea, whose pitch is different and responds to a regular series through the musical scale. The ends of the auditory nerve are connected with these fibers. Just as when one causes a heavy sound to resound against the sounding-board of a piano, all the wires whose tones answer to the partial tones of the first sound, and only these, are set to vibrating, so only those fibers of the cortical fiber-piano are set to vibrating by sound conducted to the ear, whose pitch corresponds to the partial tones of the sound. The view of Herbart, that probably to every musical tone a part of the organ of hearing corresponds, since simultaneous tones remain sundered in consciousness, finds support by this discovery. This view is sustained by J. Müller, Oersted, and Fechner. Just as the partial tones of a musical sound are held apart by the mind, so are the tones of an accord, only much easier. Most easily we distinguish the simultaneous sounds from different sources (musical instruments or human voices), because they are particularly characterized by the noises which accompany them.

§ 23. SEEING.

The specific energy by means of which the sense of sight answers to external stimuli is light, although this term is

applied not only to the sensation of seeing but to the objective cause of the same.

The adequate form of stimulus here, as with hearing, is the vibration, but of shorter amplitude and much greater speed than is the case with sound.

These vibrations belong not to ponderable but to imponderable bodies, to a supposed gaseous substance called *ether*. They are perpendicular to the radiating direction of the light, *i. e.*, to the ray of light, and thus transverse; whereas the vibrations of the medium of sound proceed in the direction of the sound-ray; *i. e.*, longitudinally.

These vibrations also may be distinguished by the three determining characteristics, duration of vibration, amplitude, and vibratory form, just as in the vibrations of sound (§ 22); but the relation of these three factors to the sensation of light, is partly out of analogy with the relations which we have learned regarding sound.

That which we can distinguish in a sensation of light is not a threefold, as with sound, but only a twofold; it is light intensity, which corresponds to intensity of sound and depends upon the amplitude, and *color*, which corresponds to height of tone only in its physical origin, and depends upon the duration of vibration (frequence of vibration and length of wave), whereas in its subjective aspect it is to be placed parallel, not to the height of tone, but to the verbally related tone-color, or timbre; *i. e.*, to the peculiarity of sound. Physically, color depends upon the refrangibility of light, which is again conditioned by the length of wave and the duration of vibration, as is proved by the dispersion of white light and into the prismatic colors, red, orange, yellow, green, blue, indigo, and violet, so that the red rays have the least refrangibility, and the violet the greatest. The color spectrum corresponds, therefore, to the scale of the piano. But although the different pitches announce themselves subject-

ively even to the unmusical ear, so that the higher notes are recognized as such, and the mounting of the pitch and that of the sensation is in accordance with psycho-physical laws, yet there is nothing in the sensation of color which indicates any augmentation in the occasioning stimulus, and we should not suspect that red is the lowest and violet the highest color-tone, did not the physicist establish this relation for us as the result of an exact investigation.

The simple or homogeneous colors are distinguished from mixed colors. The less white there is in color, the more homogeneous it is. White itself in all its decreasing gradations in intensity down to black may be regarded as the lowest degree of homogeneousness in a color. The most homogeneous are the spectrum (rainbow) colors; all other colors seen through colored glasses, or obtained by the use of pigments, are not completely homogeneous.

Red and violet, which stand at the extremes of the spectrum (*i. e.*, of the prismatic chart, also of the rainbow), produce purple when mixed, and are related to each other like two adjacent colors of the spectrum, as, for instance, red and orange.

The color series is, therefore, not straight like the musical scale, but forms a line whose end always approaches its beginning; that is, as respects purple, a closed curve or, more simply, a color-circle.

Since the various colors in the spectrum have an unequal extension, there is in the color-circle an unequal arc and spectrum surface corresponding to them. This is determined by the greatest number of noticeable gradations which can be distinguished in each color; this number is greatest in yellow and blue, and smallest in red and violet.

Among the simple colors, there are a few noticeable on account of their independent character, whereas the others are perceived as stages of transition between these. The

first are called primary colors, of which there are three—red, yellow, and blue. The others are called secondary colors.

The eye is not able to distinguish whether any given color is homogeneous or mixed. The sensation of light is always qualitatively simple. The eye is not able to make an analysis of it, as we have found the ear able to do in the case of the sensation of sound.

Remark 1.—The eye, which is relatively the most independent part of the human body, is an active, dioptrical apparatus, not unlike a camera obscura. It consists of a succession of substances, mostly transparent, which, in accordance with their various curvatures, represent a system of optical lenses of most exact focus. In the background of the eye, where the so-called blind spot is found, the optic nerve enters the eye ball, and spreads out into the retina, whose mosaic-like structure is adapted to allow an adequate attack upon the optic nerve by the ray of light, which, entering through the pupil, has passed through the refracting media of the eye,—the cornea, the aqueous humor, the lens, and the vitreous humor. In distinct and normal vision all rays of light which enter the eye from a point of a visible object unite in a point upon the retina, so that the parts of the object are projected upon the retina in an exceedingly minute image. Since the rays of light from different points cross at the focus before they reach the retina, the picture upon the retina is an inverted one. The nature of the attack of the rays of light upon the mosaic structure of the retina can not, in the present state of nerve-physics, be decided with certainty. Fechner's hypothesis is, that the nerve activity which is resolved by the light and sound stimulus, upon which the sensation of light and sound functionally depends, not less than the stimulus itself, is to be thought of under the form of vibratory movements (Psycho-Physics, II., p. 282). In regard to the sensation of color, Tho. Young has proposed the hypothesis, that there are in the eye three kinds of nerve fibers, to each of which is ascribed a different kind of sensation; viz., sensory nerves for red, for green, for violet. This theory, somewhat in analogy with the accepted theory of sound, has recently been supported by Helmholtz (Doctrine of Sound-Sensation, p. 221). Fechner assumes, in opposition to this view, that all colors of the spectrum can be perceived by every optical nerve-fiber, the consequence of which is, that when different simple optical colors penetrate the same optic nerve-fiber,

they, on account of interference, unite in a single middle state of vibration, whose sensation is completely analogous to that of a simple color.[1])

Remark 2.—Over against the many analogies between sound and light, we find significant deviations. Besides those already mentioned are the following: The color-scale [ranging for visible light between the limits of 481 billion (red), and 764 billion vibrations per second (violet)] comprises, according to Helmholtz, about an octave and a quarter, whereas the musical scale comprises a whole series of octaves. Even without any external light-stimulus, we have a positive light sensation, that of the black field of vision, whereas we have no sound-sensation without sound stimulus. Black is, therefore, not analogous with silence. There are complementary colors, but not complementary tones. The peculiarity of coloring is so altered by the strength of the illumination, that certain colors approach white if the intensity of the light is greatly increased, etc. (Compare Fechner's Psycho-Physics, II., chapter 33, C.)

Remark 3.—Under the microscope, the retina appears as a highly complex, wonderfully arranged structure. It consists of no less than ten different layers, the next to the last being the *bacillar* layer, composed of closely packed perpendicular rods, and covered by a layer of pigment-cells. Only this is sensitive to the light. According to the most recent investigations this excitation is photo-chemical; the light stimulus is transformed into chemical action before it attacks this layer of the retina, and the picture on the retina is, accordingly, chemically produced like that upon the photographic plate.

Remark 4.—The theory of vision, lying on the borders of three sciences (physics, physiology, and psychology) forms a subject which

1) Not without reason does Fechner assume that we by no means have the sensation of a simple color as it corresponds to the ether oscillations of simple periodicity, and that every optic nerve-fiber under the influence of even the simplest color stimulus effects a union of vibrations. (Psycho-Physics, II., p. 301.) That which we call homogeneous light would be consequently one which produces relatively the simplest subjective color-mixture. The fact of complementary colors speaks for the correctness of this view. The explanation of color sensation by Young and Helmholtz is in contradiction to the fact that the objective homogeneous illumination of the whole field of vision answers also to a subjective homogeneous sensation, that therefore the local distribution of the three kinds of sensory nerve-fibers of the retina is in no wise subjectively announced. This objection was proposed by C. Bohn, in 1865.

has been handled with great scientific energy. The most important points, regarding which reference must be made to physics and physiology, are especially the following;—The eye, which is mediate and in accordance with a scheme or plan—the doctrine of the accommodation of the eye—the topography of the retina according to meridians and the theory of identical retinal points—double and single vision and the theory of the horopter—the relation between light and color—subjective colors and optical illusions—the movements of the eye. Of these points, only the question of erect and simple vision demands mention. Why, notwithstanding the inverted picture upon the retina, we see objects upright, is a question which may be disposed of by the remark, that the arrangement of the points of the retina is in itself not a ground for the mind's perception of space, and that, even if it were, it would be valid only for the relative position of the stimuli among themselves, but in no way for their position in space. Since, however, as will be shown later, muscular sensations are chiefly concerned in giving the eye its first experience in space, the eye having to sink in order to bring a lower retinal point to the place of distance vision (the center of the retina), it is clear that the report of the muscular sensation regarding above and below corresponds to actual conditions in space.

Single vision with the two eyes is a question which, on the whole, needs an explanation, because it occurs under some circumstances, but does not under others. Simple vision with the two eyes will, in general, take place when the images from the same point of space fall *identically* upon the retinas; *i. e.*, upon such points as correspond to each other upon the two retinas. The identical places upon the two retinal spheroids lie in such a way that they have the same latitude and longitude, provided one fixes the places upon them as Geography fixes the points upon the globe, and regards as poles those points where the line of vision touches the retina. If, however, the quality of light falling upon the identical points of the retinas is different, the mind sees the object in a mixed color. The relating of identical retinal stimuli to the same point in space is evidently a matter of habit, and goes hand in hand with projection. Particulars concerning these relations may be found in Helmholtz's "Psychological Optics," in Volkmann's article "Vision," in Wagner's "Dictionary of Human Physiology," and in the appropriate technical periodicals.

§ 24. SENSE CONTRIBUTION TO KNOWLEDGE.

The offices that the various senses play in spiritual life are very different. The vital sense creates a general perception of our own organic life; the chemical senses stand in close relation to the bodily processes of nourishing and breathing; touch and sight participate in the perceptions of the spatially extended, whereas the world of changes in time falls to the sense of hearing.

The noblest part in the disclosure of the external world belongs indisputably to the sense of sight, which gives rise to nine-tenths of all sense perceptions. Its impressions are so distinguished above the others in clearness and distinctness that language borrows its figures for the perfection of knowledge from this sense (idea, insight, evidence, intuition), and the perceptions arising from the other senses must, for the sake of scientific comparison, be reduced to optical perceptions; as, for example, temperatures to the length of a tube of quicksilver, difference in weight to the graduation on the arm of the scales, etc.

To the sense of sight is added that of touch, controlling and rectifying it. Whereas the perceptions of sight lead only to surface images, which not seldom extend to optical illusions, we gain, through the tangibility of the sense of touch, the conviction of the solidity of external things and their material peculiarity. The two senses work most intimately together, so that touch presents only a rude seeing in the immediate neighborhood (touch of the blind), the sense of sight only a refined touching at a distance.

In connection with the mobility of the organ of sight, the greatest assistance is furnished by the touch of the human hand which is here brought to its highest perfection, in that this sense arranges external objects for the best and most complete comprehension. The hand works with the eye in

the most intimate manner; without the hand the compass of optical perceptions would remain limited to that which accidentally presents itself to the eye, whereas we now, by means of the skillful use of the hand, compel objects to reveal their most hidden aspects to the eye. In addition, we work with hand tools, with which we again produce more complete instruments, until in this way we arrive at those instruments which, partly because they arm our senses with an energy far beyond their ordinary achievements, and partly on account of the disclosure of entirely new kinds of natural activities (*e. g.*, electrical action through the electroscope), are to be regarded as artificial organs of sense.[1]

Hearing assists but little in the knowledge of that which is extended in space, but all the more for the perception of that which occurs or develops in time. Silence is the picture of fixedness and death; all motion, all change, all life, are connected with the production of sound. But not only outer, but also inner change is revealed by hearing, and just as sound comes from within and depends upon the material qualities of the sound producer (straw, wood, iron, silver,

1) The hand, provided with members, duplicated, and finely sensitive, is a specifically human organ, comparable to a universal sense. The animal which in physical regard stands next to man, the elephant (not the ape), possesses in the proboscis the organ which approaches the hand most nearly, although it lacks the separation into fingers, the opposition of the thumb, and the presence of a duplicate of this organ, If we would exalt the service of the hand for the disclosure of nature, serving as it does both understanding and will, we need only to think of the apparatus and experimenting art of the physicist. Nature has given us no special sense for electricity and magnetism, which are closely related, such as we have for light, heat, and sound. A magnetic storm may rage at our feet, setting the magnetic needle into violent vibrations, yet we perceive it not, except when we have provided ourselves with an artificial sense in the magnetic declinator, which announces to us the slightest variation of the magnetic earth-force, but through translation into optical language. For electric currents, which announce themselves to our senses only when they have arrived at a certain intensity, we possess in Schweiger's Multiplicator an instrument of the highest sensitiveness, which shows the presence of the slightest current.

stretched membrane, clock ware), so it reveals to our ear the hidden peculiarities of things which evade the seeing eye or the touching hand, and which so peculiarly affect us in the mingling of the various sounds of nature, in the wonderful expression of the human voice, but above all in language and music.

So the sense-perceptions work together to assist us to a knowledge of the outer world, of which lights and colors, noises and musical sounds, smells and tastes, degrees of warmth, hardness, and roughness, are to be regarded as elements. Our perceptions of the same external thing, gained through the different senses, come together in our consciousness into a whole, or total perception, of which the sight-perception takes its central place, hence the name *intuition*[1] (*Anschauung*).

Thus, in the sense-perception (intuition) of common salt, for example, are included the whitish color, the hexahedral form, the peculiar taste, the rough, hygroscopic feeling, and the peculiar crackling when pressed together. It is the vital sensation of the body in company with the perceptions of the senses which furnishes an "intuition," or sense-perception, of the latter.

Remark 1.—The sum of our perceptions forms the circle of our sense experience, and at the same time the material which conditions all the higher activities of our soul. The greatest extension of this circle is seen in the first years of life, and in the following periods of childhood and youth, and it also experiences constant extension during middle life. Travels in foreign countries, intercourse with men, attendance at expositions, theaters, galleries, museums, menageries, collections of art, factories and workshops, mines, the examination of varieties and curiosities, are capable of greatly widening this compass of sense experience. These sense-perceptions form also the

1) The etymological meaning of this term is apparent, but its signification has become so ambiguous through extension, that it is thought best not to retain it in the sense of a direct act of cognition through the senses.—*Translator.*

illustrations for our mental life; where they are lacking, all activity of mind degenerates into an idle play of thought. It is with reason, therefore, that modern didactics proposes to make instruction concrete, or objective, as a cardinal requirement, and demands demonstrations and experiments wherever they are admissible. (The *Orbis Pictus* of Amos Comenius as the beginning point of this tendency.)

Remark 2.—Animals also have senses, whose number hardly ranges above five, while with many animals the number is decidedly smaller; and there are animals which feel only. On the other hand, certain senses with animals are capable of a particular intensifying of their function. Usually the apparatus of sense is simpler with animals than with man. Thus, as we descend in the animal kingdom, we find that parts of these organs drop off one by one—with the ear, the outer ear, the chain of bones, the parts composing the labyrinth;—with the eye, the parts of the dioptrical apparatus, until, finally, a nervous membrane takes the place of the whole organ. The conditions under which animals live lead, likewise, to peculiar deviations in the structure of the organs of sense. The compound eye of the insect, with its mosaic sight, is based upon an entirely different principle from that of the eye of man; it offers wide limits of accommodation with less distinctness. So, perhaps, our world of variegated colors and forms is, with the lower animals, gradually reduced more or less to one of mere light; the world of musical sounds or individual noises, to one of mere noise. (See the exact presentation of this subject by C. Bergmann and R. Leuckart, "Comparative Anatomy and Physiology," p. 436.)

§ 25. BODILY MOVEMENTS.

Muscles and motor nerves comprise the motive apparatus of our body. Motion is excited by an impulse conducted by a motor nerve fiber in centrifugal direction, and executed by a muscular contraction.

Movements are distinguished as voluntary or involuntary, according as the ground for the same lies in the soul or not, *i. e.*, in a volition. Between the two lie those movements which may be termed automatic. Their source, but not their consequence, is to be found in mental activity.

Involuntary movements are reflections of sensations excited from without. The excitation of a sensory nerve penetrates to a nerve center, and, by means of a ganglion, is here transferred to the central end of a motor nerve, whereby a certain motion is impelled, without any action of the soul itself. The simplest case of such transmission is that of reflex movements, which relate mostly to the warding off of harmful attacks from without, and to the unconscious utilization of that which is useful. They occur even in beheaded animals, and often take on the appearance of purpose, since the motor nerves are so arranged in the organism of the animal that the stimulation of a given central ganglion excites complex states, and therefore stimulates connected movements. In the instinctive movements of lower animals these machine-like reflex-actions are at their highest stage of development, whereas in man they retire before the rule of intelligence.

Automatic movements are those that arise mechanically, being occasioned by the mental states which attend them. To this class belong first, imitative and facial movements, as well as bodily manifestations of emotion. They are withdrawn from our discernment and partially from our direction. Gesture and play of feature are not wholly within our control (otherwise the formation of physiognomy, which is feature and gesture made permanent, would be within our power), and we can give no reason why laughing should be associated with pleasure, and crying with pain.

Next follow imitative movements, in which the perception of movement breaks out the more into actual motion, the less self-control hinders it. To this also belong locomotive motions of the body, as in walking, dancing, swimming, practicing of gymnastics, etc. All these movements are probably caused by muscular sensations, which call forth motions corresponding to those by which they were themselves formerly produced.

Voluntary movements, finally, are those which are impelled and carried out in specific directions by the Will. This execution presupposes control of the apparatus of motion, which is gradually gained in the course of life through constant attempts at movement, and long continued exercises.

Remark.—At first bodily movements are consequences which make their appearance with the regularity of a natural mechanism, upon the occasion of certain stimuli. This mechanism remains hidden from our insight throughout our whole life, and the mind succeeds only gradually in its attempts to govern the mechanism, just as a workman by moving levers and valves controls a machine of whose inner structure he has no conception. "Reflex motions appear, like the letters of the alphabet, as the simplest elements of that accordance with design which mechanically determines nature—which serves the soul since it leaves to the mind, under the united influence of perception and reflection, the combination of these elements into sufficiently accurate and effective means" (Lotze). In the animal world the combination of these elements is by no means left to volition, but is determined by the arrangement of the central parts of the nervous system, so that a given stimulus calls forth, not the elementary motion, but whole groups and series of like motions. The foregoing illustration of the mechanism holds especially of animals, whereas the soul of man is more in the condition of the piano player, who entices harmonious tones from an instrument whose mechanism is unknown to him, by means of well designed strokes. Whereas, then, the apparatus of motion in the human body presents a universal instrument, which the soul can apply to the most various purposes under the influence of practice, the body of the animal, especially with the lower animals, is throughout a machine, which the animal, by means of instinct, can use in only one way, that, namely, which is conditioned by the inner mechanical arrangement. The body of the spider is a spinning apparatus, that of the fish a swimming apparatus. "The organism of the chicken is so arranged that it can pick up grains, and it does this immediately as soon as the stimulus given to the center of sensation through the optical apparatus, has set in motion the first motion necessary to this end. The chick will do this as soon as it has left the shell, and even before"(Lewes).

§ 26. THE SENSE-PERCEPTION.

Sensations are mental states, which, though occasioned by external stimuli, have in themselves a purely subjective character. We learn only gradually to refer these subjective states to the occasioning stimuli, and thereby use them as means to our knowledge of the outer world.

The sensation with reference to the outer object which it brings to our consciousness is called a SENSE-PERCEPTION. The perception relates to something which has been perceived as its actual object, whether this object be a thing, a quality, or an event. Whereas in the case of body-sensations the perception is limited to our own body, it is referred in the case of the sense-perceptions to the outer world. Colors, sounds, smells, and tastes, degrees of hardness and weight, are peculiarities in the aspect of external things, which we perceive by means of the sensation, and which we ascribe to external things as qualities.

That the sensation may become a perception, it must be freed, or separated from the totality of impression caused by that which is simultaneously felt; *i. e.*, it must be isolated, and referred to the external stimulus which caused it; *i. e.*, be projected. *The perception is, therefore, nothing more than a sensation, isolated from all others, and outwardly projected.*

The process of isolating and projecting sensations falls in the first period of life. The new born child looks, but without seeing; it hears without understanding; it has sensations without having perceptions. The sensations unite in its consciousness to a purely intensive sound-sensation, in which all sensations falling in the same beat fuse into an inseparable whole of impression, which announces itself subjectively, according to its tone, as pleasant or painful, without allowing any significance of content to its elements. No conscious relation to the outer world occurs at this stage.

This begins with the isolation of individual sensations, or, since complete isolation never wholly occurs, of simple combinations of sensations, as a consequence of their exceptional strength and their opposition to other simultaneously perceived sensations. When a sensation is lifted far above its threshold value, while the other simultaneous sensations relatively or perhaps entirely retire before it, it can be easily distinguished from them; *i. e.*, be isolated. So, in a confusion of tones, those are at first perceived which on account of strength or opposition separate themselves from the others.

The projection of sensations is brought about through the system of *local signs*. By a local sign is understood that peculiar coloring of a sensation which depends, not on the outer object as such, but on the direction of its attack against the periphery of the sensory nerves. If all stimuli which touch the periphery at a certain place give rise to a common content of sensation, it is clear that all these sensations are to be related to a common origin, and in case the idea of space has already developed in the soul, to the same place. So it happens that we locate sensations out of the soul in the body, and according to circumstances outside of the body in the outer world. Thus we perceive the pain of a wound in the wounded spot; and, after the amputation of a limb, even in the missing member. Sounds and colors, on the other hand, we do not locate in the ear and eye, but in the outer world.

Projection, also, which with the acquisition of the idea of space develops to localization, is a matter of practice. The infant does not localize; even in painful operations its hands need not be held, since it does not know the seat of the pain and does not know how to find it with the hand. And even the adult often projects falsely, since he locates the humming in the ear or the gnat in front of the eye at a distance.

Remark 1.—The isolation of individual combinations of sensations is in many cases the consequence of a *movement* of the object.

When the child follows a moving object with the eye, all the sight sensations which the eye receives simultaneously from the neighborhood change in rapid succession, and only the sensations originating in the moving object remain unchanged. The sensation from this object comes into relief against the changing surroundings; the attention is awakened and the perception begins.

Remark 2.—The local signs rest partly upon the sympathetic sensations, which arise from radiation of the sense stimulus, as was shown in the sensation of touch (§ 20), and partly upon muscular sensations which accompany the outward impression. For the perception is not a mere passive reception from without, as the sensation perhaps might be; it is rather mediated in all cases through active movements, which effect a favorable adjustment of the organ of sense or a series of such favorable adjustments, and which are reflected in our consciousness by means of muscular sensations. In this way hearing becomes listening; sight, looking; and smell, scenting, or tracing by smell. These movements of adjustments are least developed in hearing, although they are not wholly lacking there; in hearing we have only the obscure muscular sensation of a certain tension of the auditory apparatus, without any essential differentiation of the muscular sensations for the different directions of sound. For this reason the sound perceived through one ear alone may perhaps be projected outward, but in no wise localized. Adjusting movements are most perfect in the eye, which, being capable of great mobility, is alone able to effect a precise localization as regards distances.

Remark 3.—The perception is not a simple somewhat, nor is it originally in the soul. It is not simple, because even the single tone or the single color is a synthesis of several partial sensations, to which are added the sensations which give rise to the local signs; but neither is it anything original to the soul, because it is the result of a gradually widening experience as to the relation of this or that to the mass of what is simultaneously given in sensation. A more exact description of the process which is fundamental to the formation of perceptions will be given later in the theory of attention and of the notion of space.

CHAPTER II.

REPRODUCTION OF CONCEPTS. WHAT BECOMES OF THEM.

§ 27. CLEAR AND OBSCURE CONSCIOUSNESS.

The total of all concepts possessed by a person at any given moment forms the consciousness of that person for that moment.[1]

The number of concepts which form this consciousness is immeasurably great. For, even the single "general sensation" (§ 18) we have considered as the sum total of numberless single sensations which answer to the organic changes of the whole body.

To consciousness concerning the body, brought about by this general sensation, is to be added consciousness concerning the external world, effected by the senses. We know not only about the changes within our body, but also about the events without, because they are announced to our consciousness through sensations, even from considerable distances, by means of sound and light.

We have, finally, each moment, a multitude of concepts in the narrower sense of the term (§ 13), to which no immediate sense impressions correspond, and which are to be explained through the continued existence of sensations which have formerly been present in consciousness.

1) That the content of this consciousness is, like the view in a revolving kaleidoscope, a perpetually changing one, so that it is difficult to determine it for a single moment, is sufficiently well known to every observer of mental activities.

The form in which these numberless concepts meet in order to effect consciousness is that of synthesis into the strictest unity,—the form of interpenetration even for concepts which arise from objects separated in space.

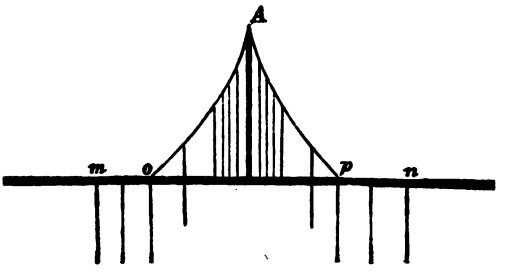
Where that which is so numerous, so manifold, and even so different in kind is brought together into a strict unity, it can not be expected that one element should distinguish itself clearly from the others, but it is rather conceivable that the many should flow together into an obscure unorganized chaos. Not clearness, therefore, but obscurity is the original form of consciousness, as is the case with the new born child, the majority of animals, and with the adult in the condition of sleep.

This obscurity lasts as long as the concepts are equal, or nearly equal, in strength; or, figuratively speaking, as long as they stand equally high above the threshold of consciousness:

(FIG. 2.)

Very soon, however, the occasion arises for individual concepts to be distinguished from the others, either through the strength of the sense impression, or through connection with other related concepts:

(FIG. 3.)



As a matter of course, the other concepts must to the same degree sink below the threshold (wholly or partially), whereby a *focusing* and *narrowing* or concentrating of consciousness occurs, the former at A, and the latter from *m n* to *o p*.

In this way, a severe bodily pain distinguishes itself from the other sensations arising from the body, the concept of a brightly illuminated object from those of other objects; in the same way, the form of an acquaintance is clearly perceived amid a crowd of persons.

Our consciousness can, therefore, extend over an unlimited number of concepts, or can be focused in a narrow circle of concepts which belong together. In the first case the concepts remain obscure, in the latter they become clear. We distinguish, therefore, an obscure (potential), and a clear (actual) state of consciousness.

The activity of the soul which effects the concentrating and focusing of our consciousness so that clearness results, is called ATTENTION. The attention is always directed to a single object, which is at the focus of mental activity, and about which all that is related to it gathers; whereas all that is foreign to it (*m o* and *p n*), is pressed below the threshold of consciousness. If the object of attention is an extended or complex one, as is usually the case, the focus of attention moves from one point to another.

The opposite of attention is a general distraction or absent-mindedness, which turns to no special object (listlessness, indifference, sleepiness). A partial absent-mindedness; *i. e.*, inattention for everything except for a special object, is inseparably united to the condition of attention, for to be attentive to one thing means to be inattentive to all else. For example, the absent-mindedness of many scholars for events in their neighborhood in consequence of attention directed to study is well known. Many things which occur in our

neighborhood are lost to us, because our attention is otherwise directed. When, for example, we are absorbed in some activity, we do not hear the stroke of the clock, do not notice the entrance of a person, etc. Archimedes, intent upon his geometrical figures, could thus fail to hear the war cries at the siege of Syracuse. The objective conditions of the sense-perception are not wanting, the waves of sound reach the ear, the rays of light enter the eye, and there is no doubt that certain obscure sensations are present in the mind; but the attention is directed to other things.

The attention may follow the strongest impressions involuntarily (lightning, contrasted phenomena, the novel), but it can also be voluntarily directed to the most insignificant things.[1)]

Remark 1.—The greater number of our concepts belong to obscure consciousness, and Leibnitz long ago made the striking remark, that our clear concepts are like islands, which rise above the ocean of obscure ones. The Psycho-Physic law (§ 16) teaches us that the threshold of the (clear) sensation lies higher than the zero point of the stimulus. Those stimuli which lie below the threshold value, do not, however, pass by entirely without trace; numerous experiences show that they leave in our consciousness obscure concepts as traces. If the stimulus which lies below the threshold value suddenly ceases, we become conscious of it, though we had not noticed its positive reaction; we perceive when the pendulum suddenly stops; one awakes from deep sleep in a mill when the machinery suddenly ceases to move. While these concepts were originally obscure, there is a more numerous class of concepts now obscure, which originally arose from obscurity into clearness. All concepts which were once in consciousness belong to this innumerable host.

Remark 2.—The obscure concepts are of extraordinary importance for the process of soul life; nor has this importance, up to the present time, been fully recognized. They constitute in our consciousness a chorus, which, though not appearing in an active rôle,

1) The more exact significance of attention can only be given later. (See § 46.)

yet continually mingle in the drama of soul life. The obscure concepts are to our consciousness, what the great mass of people are to society. From them comes the motive power which guides the activities above the threshold of consciousness.

Remark 3.—Clear consciousness may be thought as the circle of those concepts upon which attention rests. Experience shows us that this circle, like the pupil of the eye, can be extended or contracted within certain rather wide limits. The greatest narrowing occurs when we concentrate our attention upon a single object, as, for example, when we become absorbed in thought, or narrowly observe an outward phenomenon; the greatest extension takes place when we widen the bounds of the narrow consciousness to its greatest extent, in which case there would be really no concentration of mind and no attention. It is apparent that the width of this circle is indirectly proportional to the clearness of its single points; *i. e.*, that our attention is so much the less intensive, the more extensive it is, or the more it is divided.

Remark 4.—The attention is involuntary when it is awakened and guided by the sense-impressions themselves, without the agency of the Will; it is voluntary when it stands under the influence of the Will. Powerful sense stimuli are able to arouse our attention, because strong sensations correspond to them; but even the gentlest impressions can make their way into our clear consciousness, when they are met by that form of consciousness known as *interest*. (The observations of the astronomer, the physicist, the physician, the angler, the impassioned man.) It is well known that new impressions in particular excite our attention, because here the perception is more easily distinguished from the mass of the others on account of its contrast. (Perception of a comet.) It is also known that, up to a certain limit, attention rests under the influence of the Will. Without changing the position of the eye in the least, we can make clear now this, now that part of the field of vision through an application of the attention, and in a concert it is easy to attend, now to the stringed, now to the wind instruments, now to the height of the tones, now to their force.

Remark 5.—Attention manifests itself not only in the elevation of a concept into a certain degree of clearness, but also in the retention (fixing) of the same; *i. e.*, the retaining of this degree of clearness through a measurable time. Only in this way can a concept escape

for a short time the universal fate of concepts, which is, in the change of psychical states, to sink below the threshold of consciousness. As is known, children can not retain even a sense-impression for a long time, and it is rightly held to be a characteristic of a rightly formed consciousness, that it can retain a thought through changes of impressions and ideas, and examine it in all its relations. Herbart rightly remarks, "*Quodcumque summi homines valent ingenio et deligentia, id valent attentione.*"

§ 28. FUNDAMENTAL LAWS FOR THE RECIPROCAL ACTION OF CONCEPTS.

A numberless multitude of concepts constantly press into consciousness (clear consciousness), partly from the current of body-sensations and from the five senses, partly from the side of the circle of obscure concepts; for, every obscure concept strives to come into consciousness, and would succeed, were it not hindered by a similar striving of the other obscure concepts.

Our consciousness is not able to receive all these concepts; for, otherwise, the representing power of the soul would be an infinite magnitude.[1] Experience teaches, rather, that in the measure in which we apply our mental activity to one object, we must withdraw it from all others. This fact is called the *concentration of consciousness.*

On account of this narrowing or concentrating of consciousness, the concepts come into reciprocal competition, in that they severally contest for the floor of consciousness. The cause of this contest is the opposite nature of the concepts, in that each strives to determine consciousness in a different sense (black, white, high, low, motion, rest). The effect is

1) The soul's power of representation is a finite one, an unchangeable magnitude for a certain class of conditions. This power is by no means a constant one for different time points, but is subject to very great variations, as appears in the highest pitch of passion, its upper, and in the calmness of deep sleep, its lowest limit.

reciprocal arrest, which consists in this, that the effect of every concept; *i. e.*, mental activity as consciousness of the content of the concept, is wholly or partially restrained.

Only those concepts are free from arrest, between which there is no opposition in nature. They are, first, those of like, and, second, those of totally different nature (like and disparate concepts). The concepts "white" and "cold," in the including concept "snow," do not arrest each other.

Similar concepts (§ 15), like white and black, cold and hot, are opposed, and arrest each other; they reciprocally obscure one another and sink below the threshold of consciousness.

That which remains after the arrest must unite into a strict unity, for (according to the foregoing paragraph) the form of consciousness is that of strictest synthesis into unity.

Whereas different kinds of concepts unite with their full intensities (degrees of strength), because they are free from opposition in their nature, the similar kinds of concepts (opposed) unite with only those degrees of intensity remaining after the arrest. In the first case the union, or synthesis, is complete, in the latter it is incomplete; the former we will call groups, or complications; the latter, fusions. To the groups of concepts belong especially perceptions of individual things, whose characteristics, however, on account of their non-comparableness, are free from every opposition (§ 24). When I perceive a group of men, the sensations which relate to one individual form a complication, or group, but those which relate to the whole group of men, form a fusion of concepts.

From what has been said, the following simple laws for the reciprocal interaction of concepts may be derived:

1. Simultaneous concepts fuse; *i. e.*, they flow together into a single act of cognition.

2. Simultaneous concepts of different natures fuse without arrest into a total concept (complication).

3. Simultaneous concepts of opposed nature first arrest one another and then fuse with degrees of intensity remaining from the arrest.

4. Total concepts are either complete or incomplete syntheses, either complications (groups) or fusions in the narrower sense.

Remark.—Perceptions are the first permanent combinations of the elements of our cognizing activity, namely, the sensations arising from the senses like words from letters. All our perceptions rest upon the synthesis of particular colors and forms with specific tones, impressions of touch, smells, and tastes. But perceptions are grouped again into higher, more compound concept-structures, as words of a language unite to make sentences. The perception of a landscape, extending before our eyes, is a very complicated concept structure, to whose comprehension the mere opening of the eyes in the direction of the stream of light by no means suffices; for, animals, children, and idiots turn their eyes toward the landscape without obtaining a perception of it. One must first have gained a sense-perception of the leaf, the tree, the thicket, etc., before one can succeed in finding the bearing of things in a landscape by means of the eye.

§ 29. ARREST IN PARTICULAR.

Arrest relates not to the content, but to the intensity of concepts (§ 15); it is not a change in the concept itself, but is a diminishing of the concept power.

The concepts suffer this lessening of their power in indirect proportion to their original strength, or intensity. The weaker a concept is the greater is the part of the sum of arrest which it must take upon itself. If this part becomes greater than its original strength, the magnitude of its actual representing power becomes reduced below the zero point; *i. e.*, the concept sinks below the threshold of consciousness. The arrest of concepts leads therefore to the obscuring of those which can least resist. Experience teaches us that those

concepts which suffer arrest constantly sink out of consciousness to make place for others. On account of this coming and going, our consciousness is subjected to a constant movement, in that the equipoise of the concepts changes from moment to moment.

The share of arrest which the total concept must assume is divided among its elements, *i. e.*, among the partial concepts. They reciprocally assist one another in supporting the arrest; one helps the other to assert itself in consciousness against opposition. They are called, therefore, "helps." In a total concept, M (image of our home), composed of many partial concepts, A, B, C, ... (parental house, environment, father, mother, brothers, and sisters, ...), these partial concepts are "helps" for one another and for the total concept, M; their effect is to prevent this from being permanently obscured. If one of these partial concepts is in itself very weak, for example, C, it can, notwithstanding, by the aid of the others maintain itself against the arrest, which would not be the case if it stood unconnected in consciousness. So, in the total picture of our home, even the most insignificant features appear, whereas much stronger impressions, for example, those received upon journeys, are irreparably lost.

The force with which a concept resists arrest depends not only upon its original strength, but also upon its fusion with other concepts. "Fusion mitigates the force of the arrest, in that it diffuses this force." But it must be here noted, that partial concepts assist one another only in so far as they are fused together, complications or groups of concepts; *e. g.*, perceptions (§ 28), manifest a greater capability of resistance than do imperfect fusions, because the partial concepts in the former case appear as helps to one another with their full intensity, whereas, in the latter case, the amount of help is measured by the intensity remaining after arrest.

Through fusion, arrest is extended also to concepts between which there was originally no opposition. A and B (light stimulus and sound excitation) are originally disparate, and therefore free from arrest; but B is fused with A_1, which is opposed to A. In this way, A_1, as partial concept of $A_1 B$, is drawn into the arrest. On this account we close the eyes in order to receive the full effect of a piece of music. Upon this rests the fact established by Bessel, that in astronomical observations the exactness of sight perceptions is injured by simultaneous perceptions of hearing (*e. g.*, by noting the strokes of a pendulum—personal mistakes in observations).

Remark 1.—If one wishes, with Herbart, to subject the arrest of concepts to mathematical calculation, in order to calculate the share of the partial concepts in arrest, one must know, 1) the sum of arrest, and 2), the relation of the arrest. With two concepts, A and B, whose intensities are respectively a and b, and whereby $a > b$, the sum of arrest in complete opposition would evidently be equal to the strength of the weaker concept, that is, equal to b; for suppose by a fiction that B is under total arrest, the power of the two concepts to unite is made out, and all ground for further arrest is removed. But in reality, this sum of arrest, b, is not borne alone by B, but by A and B in common, and, more exactly, in indirect proportion to their strength.

In order to calculate the share in arrest of A and B, one needs only to apply the rule of fellowship, and to assume b as the sum to be divided. If x and y are the shares in arrest of A and B respectively, we have, according to the rule of fellowship:

$$\begin{matrix} 1.\ (a+b) : b = b : x \\ 2.\ (a+b) : b = a : y \end{matrix}\ ;\ \text{therefore}\ x = \frac{b^2}{a+b},\ y = \frac{a\,b}{a+b}.$$

After arrest, the two concepts, A and B, fuse with the values, a—x and b—y. Were, for example, the intensities of two entirely opposed concepts 12 and 6 before the arrest, the sum of arrest would be 6, and the share of arrest of the stronger concept, namely 2, is half as great as the weaker, namely 4, and their remainders of intensity after the arrest are accordingly 10 and 2. Should y=b or y—b, though with merely two concepts this could not happen, the remainder of actual rep-

resenting intensity would be zero or negative for B; that is, B would suffer obscuration. It is considerations of this sort that lie at the basis of "The Statics and Dynamics of Concepts" founded by Herbart, whose design can by no means be the calculations in concrete form of the actual processes of consciousness,[1] because these processes are, in the first place, far too complicated and inconstant, and second, because a measurement of the intensity of a concept is not possible (Compare § 16, Remark 31).

Remark 2.—If the two opposed concepts, A and B, meeting in consciousness, are reduced from their original intensities, a and b, to those corresponding to the laws of arrest, a_1 and b_1, there is no occasion for further arrest; equipoise is established, and the two concepts, A and B, with their remainders, a_1 and b_1, fuse into a total concept, AB. In this way, A sinks from a to a_1, B from b to b_1, and therefore pass through a series of degrees of intensity, to which time is necessary. This results in the notion of a movement of concepts, which though in reality only one through different intensities, may figuratively be regarded as a movement toward the threshold of consciousness. This sinking movement, as the passage through different degrees of intensity in a certain time, will take place with an increasing velocity. For the sinking of concepts is proportional to the sum of arrest; the more the concepts are already arrested, however, the smaller will be the sum of arrest, but, therefore, the necessity also to a further sinking. Concepts approach their position of equipoise slower and slower, but without ever entirely reaching it. "Our mind is very often nearly, but never entirely, at rest" (Herbart).

§ 30. REPRODUCTION OF CONCEPTS.

The total arrest of a concept is its obscuration, or eclipse. Its degree of clearness becomes zero, it sinks beneath the

1) Exact investigations of this subject have led to the result that the sum of arrest between several concepts is equal to the sum of all the concepts excepting the strongest. From this it follows, further, that the accumulation of numerous concepts of small intensity may produce a significant sum of arrest, which is then divided chiefly among the weaker concepts, and explains the depressing effect of numerous obscure concepts upon the sum total of consciousness.

threshold, we are no longer conscious of it. The obscuration of a concept is, however, not its extermination, but only a latent condition of the conceiving power. This is proved by the fact of reproduction.

By reproduction is understood the return of obscured concepts to consciousness. Experience shows that every concept which was ever in consciousness, can, under favorable circumstances, return to consciousness.

These favorable circumstances consist in the removal of the arrest which caused the obscuration.

A concept may be freed from the arrest which caused it to disappear from consciousness in two ways,—either by itself or through the assistance of other concepts. The first arises when a concept like the first enters consciousness; the second, when a concept which has been combined or fused with the first enters consciousness. In the former case, similarity, or equality; in the latter, simultaneity appears to be the real cause of reproduction.

A concept, A, returns to consciousness through its own power, when a similar concept, A_1, enters. The opposites of A are also the opposites of A_1, and while A_1 struggles against its own opposing concepts, it at the same time assists A to a victory, by removing arrest from it. The arrested concept, A, is thus freed from arrest, and it arises into consciousness through its own power. In the same way a spiral spring rises when the weight which held it is removed.

But a concept, A, may return to consciousness because it is fused with others, B, C,.....into a total concept M. which equals A, B, C..... B and C appear as "helps" for A, and bring it above the threshold. In this case A is reproduced because it had been in consciousness simultaneously with B and C one or more times.

Reproduction on account of equality or similarity is called direct; that on account of simultaneity, indirect, or

mediate,—the latter because another reproduction, that of the assisting concepts, is presupposed.

The recognition of a person or thing,[1] every spontaneous remembrance of anything is an act of immediate, or direct, reproduction. The awakening of concepts by means of signs which have no similarity to the thing signified, but which are only related to them through simultaneity, as well as the association of concepts on the ground of juxtaposition in space or succession in time, rests upon mediate or indirect reproduction.

Remark 1.—The two kinds of reproduction form an opposition, and in the development of the life of the soul often invade each other. Direct or immediate reproduction unites the similar in kind, however separate in consciousness the elements may be, so far as time is concerned; indirect, or mediate reproduction unites the simultaneous, however unlike in content the elements may appear; the former is the logical, the latter the mechanical factor of the flow of representation. Direct or logical reproduction prevails in scientific treatment, in thoughtful reflection, and also in the free movement of fancy and the creations of genius; the indirect, or mechanical, in intensified discourse and in all habitual affairs. Upon the former rest spontaneous thought and the creations of genius; upon the latter depend all rote learning, and the readiness of the well schooled head.

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1) When a child sees an object for the second, third, or fourth time, it recognizes this object as that which it has already seen one or more times. In this way the earlier, obscure concept of this thing is reproduced through a new perception of it. So the eye, glancing restlessly about among a number of strange people, is suddenly fixed upon the features of an acquaintance whom we have recognized as such. But not alone the former concept of this acquaintance is reproduced by the new sight of him; this concept brings with it a whole group of other concepts which were associated with it by means of simultaneity. We not only recognize our old acquaintance, but we remember also the circumstances under which we saw him for the first time; as, for instance, the place where he was, who accompanied him, his actions, etc. The reproduction of former concepts through repeated perceptions of an object strengthens them. Were there no reproduction, the everyday things about us would always seem new and strange; we should never be able to get our bearings in the external world.

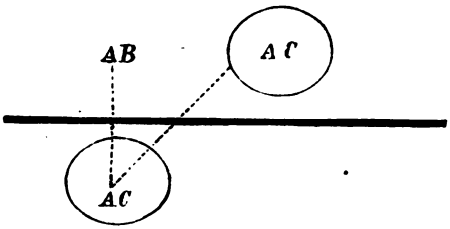
Remark 2.—The relief from arrest which is the cause of the free mounting of the obscured concepts, may also be brought about by physiological causes, as in sleep in the form of dreams. Sleep itself exercises an arrest upon our whole consciousness, proceeding from what may be called the sleep-sensation, or from alienated vital sensation arising from the weariness of the muscle and nerve systems; by this means all the concepts of the waking soul life, and consequently all our troubles and cares, are swept away, and sleep approaches us nightly, as a liberator. Upon waking, the arrest caused by the sleep-sensation departs, and the concepts mount freely from the depths of consciousness, but without connecting precisely to the trains of thought of the previous evening, so that every day forms, in a measure, its own psychical whole—a most beneficent arrangement.

Remark 3.—The fusion of the simultaneous increases in completeness and stability when repetition is added. Therefore those concept structures are particularly strong, in which the meeting of concepts in consciousness is not accidental, but in which they are rooted to one another in certain constant relations to things, as in sense-perceptions, or where they are fixed by long use, as in the connection between the forms of speech and their corresponding general conceptions. On the other hand, connections of concepts can be fixed in consciousness by means of continual practice, which appear from their fixedness as the expression of a naturally given and objective state of facts, although they may be nothing but subjective conceptions, and not unfrequently even mere idiosyncrasies. This explains the confounding of convenience with morality, of what is fashionably pleasing with what is truly beautiful, of mere time succession with causality (*post hoc, ergo propter hoc*), as well as the various forms of superstition (significance of dreams, and the like).

§ 31. SPECIAL LAWS OF REPRODUCTION.

All reproduction of concepts may be reduced to the two processes of direct and indirect reproduction. Yet, since the time of Aristotle, four specific laws of reproduction have been distinguished, viz:

(FIG. 4.)



1. THE LAW OF SIMILARITY. It reads, "Similar concepts reproduce one another." Similar concepts, however, are such as are partially alike; as, A B and A C. If A B comes into consciousness the A of the compound concept A C is called into consciousness through direct reproduction, but C is indirectly called into consciousness through A. Thus, a portrait recalls the original. Upon this law depends the force of the metaphor, the allegory, the parable.

2. THE LAW OF CONTRAST. It reads, "Contrasted concepts reciprocally reproduce one another." Contrasted concepts are such as are both similar and opposed, and in which the opposition exceeds the similarity.

Contrast is only a specific case of similarity. What alone is peculiar here is the reciprocal "illumination" of the contrast, which rests upon the fact that a concept which is reinforced by its "helps," rises clearer into consciousness, the more its opposing concept seeks to reduce its degree of clearness. Thus, a beggar appears the poorer when he is contrasted with a Crœsus; a sharper is more distinctly characterized when he is called a man of honor, or the usurer when he is declared to be a spendthrift. Among a hundred things which we possess, that appears momentarily the most valuable which we must give up; as, a mother will declare that one of her children the dearest which was to be immediately torn from her by death. Many effects in art depend upon the

uniting of contrasts; *e. g.*, the disposition of light and shade in the union of colors in painting, the alternation of the tragical and the comical in the drama (Shakspeare), the cauterizing effect of irony in contrast to sarcasm and to euphemism.

3. THE LAW OF SIMULTANEITY. It reads, "Concepts which were simultaneously in consciousness reproduce one another." They do this by indirect, or mediate reproduction, because they are parts of total or composite concepts. In accordance with this law we unite in our thoughts what nature has united in the form of juxtaposition in space, or of succession in time. This is the opposite of the process which unites according to similarity. In the latter case, we put that together in thought which "logically" belongs together on account of relation in content, no matter whether it appears united according to space and time or not; in uniting according to simultaneity we put that together which accidentally comes together in space and time, without concerning ourselves whether according to content it really belongs together or not. It is easy to see that similarity leads to the logical, and simultaneity to the more mechanical connection of our concepts.

4. THE LAW OF SUCCESSION. It reads, "Concepts which appear successively in consciousness reproduce one another in the original order." This law may be reduced to the former, for concepts which succeed one another in consciousness always remain an instant there together and hence reproduce one another. We shall consider this law more fully further on.

The uniting of concepts in accordance with the four laws of reproduction is called THE ASSOCIATION OF IDEAS.

§ 32. REPRODUCTION OF THE SERIES.

Fusion, or cohesion, affects not only the concepts which are simultaneous, but also those which follow one another,

and gives rise thereby to the series (succession). When the concept A immediately follows B, they are for a moment simultaneously in consciousness, only A is diminishing in intensity, whereas B is increasing, therefore not the full intensity of A but only the remainder of intensity, a, unites with the full intensity of B.

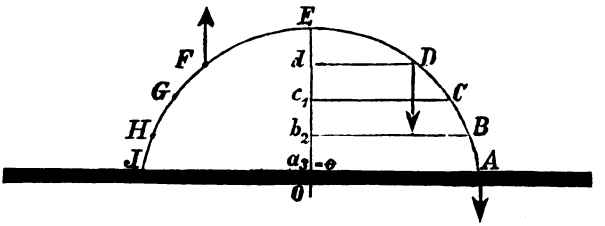
This observation may be extended to a whole series of concepts, A, B, C, D..... If the succession is rapid enough, the succeeding concepts, B, C, D....., will still meet in consciousness with certain decreasing remnants of the intensity, a, a_1, a_2, a_3.....of the sinking A, and will fuse with them. The same holds regarding remnants of B, which fuse with all following concepts in decreasing intensity, b, b_1, b_2, b_3..... When B entered consciousness, A was reduced to the remnant a; as C entered, A was reduced to the smaller remnant a_1, and B to the remnant b; as D entered, A was reduced to remnant a_2, B to b_1, C to c, etc. We arrive, therefore, at the following scheme of fusions for the successive instants of time, in which the single concepts, A, B, C....., have reached their highest degree of clearness:—

1. A		
2. a B		
3. a_1 b C	whereby:	$a > a_1 > a_2 > a_3$
4. a_2 b_1 c D		$b > b_1 > b_2 > b_3$
5. a_3 b_2 c_1 d E		$c > c_1 > c_2$
.....		.....

In reproduction the individual concepts become helps to others only in so far as they are fused with them (§ 29). When a concept, A, in decreasing remnants of intensity, a, a_1, a_2, a_3.....is fused with other concepts, B, C, D, E, it will indeed reproduce all these later concepts, but with unequal rapidity, for the mounting of a reproduced concept depends upon the amount of help, so far as its rhythm, or

time of movement, is concerned.[1] B, therefore, will first appear in consciousness, then, C, and then somewhat later, D, and reach its highest degree of clearness; *i. e.*, the series will develop. In this way the concepts appear gradually above the threshold, reach their highest stage in consciousness, and then sink back again towards the threshold. The following scheme represents to the eye the status of the concepts in the instant when A has passed through all its phases (here nine), and the member E stands highest; *i. e.*, the series has developed to E.

(FIG. 5.)



The members of the series from A to E are sinking; *i. e.*, losing intensity; whereas those from E to I are rising; *i. e.*, increasing in intensity. In the next instant F reaches the summit (E O), at a later instant, G, etc.

From these considerations arise the following laws of reproduction for the series:

1. The beginning member of the series (A) reproduces the next following members successively in the order in which the series was originally conceived, and strives to raise each concept to its full original degree of clearness;—the former, because it is fused with all the succeeding concepts in accordance with decreasing remnants of intensity,—the latter, be-

1) This principle, which is here only casually introduced, is strictly proved by Herbart upon the basis of calculation. *Psychology as a Science*, I. § 86–88.

cause these decreasing remnants are fused with the full intensity of all following members, as is illustrated in the scheme.

2. The last member of the series (E) reproduces the members which have preceded it simultaneously, but with decreasing degrees of clearness, because, with the decreasing remnants of intensity (d, c_1, b_2) of the preceding members (D, C, B), it is united with its full intensity into a composite, or total concept (E d c_1 b_2 a_3). The concepts here form a coil, which under certain circumstances may unfold into a series.

3. An intermediate member of the series is to be regarded as a final member for the members which have preceded, and as a beginning member for those which follow it; *it therefore reproduces simultaneously the members which precede it, and successively those which follow.*

The power of the series to unfold needs perhaps to be a little more clearly explained. The energy of its regular development depends upon the cohesion among members; this is again conditioned by the number of the members with which any member of the series, *e. g.*, A, by means of its decreasing remnants of intensity unites. Since these remnants continually become less, one of which must consequently become zero (in the Figure a_3), the number of members which these remnants unite with A must be a finite and comparatively small one. In long series, the reproduction of the members is no longer governed by the beginning member, but is transmitted in a wave-like manner to the end, by the intermediate members of the series.

Remark 1.—The succession of concepts in the series form, rests upon the uniform decrease of the remnants with which one member, A, is fused with the next following, and which arise of themselves at the successive conceptions. But fusion according to regularly decreasing remnants may be brought about in simultaneous reception of a number of concepts by decreasing grades of opposition. It is known, *e. g.*, that the various color qualities, the temperatures, the degrees of

hardness, etc., evolve for our conception in series according to degrees of opposition, although they are, perhaps, never actually perceived in such series. The sensations of smell and taste, with which decreasing degrees of opposition are not so general, furnish no series, or only fragmentary ones.

Remark 2.—The capacity of a series for evolution is essentially connected with the opposition of the members. Should this fall away; *i. e.*, were the members of the series nearly alike, the decreasing series of remnants of a member, *e. g.*, A, would not be brought about by the following members, but only in consequence of duration by remote concepts; *i. e.*, would be only imperfectly carried out; and since the rhythm in the running off of the series depends upon this graduated decrease in the remnants, the whole series would be almost instantly reproduced; *i. e.*, it would not arrive at evolution. These considerations are supported by experience; a row of trees, of similar houses, of uniformed men, does not easily arrive at evolution in reproduction.

§ 33. SIGNIFICANCE OF THE SERIES FORM.

Since time is the universal form of mental life, concepts take on the form of the series as an expression of the development of the life of the soul. In this way the series becomes an archetype of our concept-life, which in reality consists only of simultaneities and series.

But the phenomenon of the series form may in various cases exhibit the following peculiar complications:

1. *When several series differing in height, or intensity, pass at the same time through consciousness*, so that their equally numerous members unite, either through complication or through fusion. In this way, series of touch and muscular sensations unite with sensations of sight, when spatial relations are considered; so that which is seen in a drama unites with that which is heard into a succession of scenes; so the school boy cons his lesson aloud, that what is seen and heard may combine with what is thought. Here

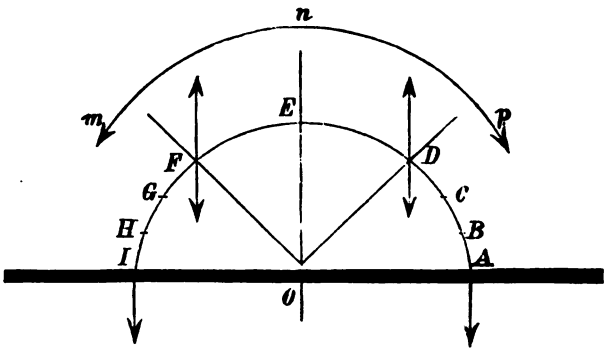
the individual members form compact unities, because they arise from the combination of the different in kind. Less intimate is the union between members which results from the *fusion* of what are *like* in kind; as, for example, where one person seeks to play several games of chess at the same time.

2. *When the members of a main series are the beginning points for minor series*, which either mediate the transition between two successive members of the chief series by interpolation, or which extend, as it were, in a direction perpendicular to that of the main series. The succession of historical facts is an example of the first case, when between the epochs of the world's history the special facts are interpolated one by one; history may also furnish us an example of the second case, when the chronological order of events branches off at points into synchronological lines.

3. *When several series of concepts cross in a common member*, whereby the chief series falters, because it tends to extend in each of the minor series, while the preceding members of these latter come cumulatively into consciousness, so that there arises about this common member a struggle and fluctuation of the concepts. This confusion is only overcome when some one of the many crossing series receives assistance, thereby having the course of the reproduction determined in its direction. Thus, a narrator may pass from one narration into another, and the occurrence of some insignificant idea often determines the direction of our flow of representation when it is left to itself. This falling together, or confusion of several crossing series may be avoided, if between corresponding members of any two such series *cross* series of a determinate length be formed, whereby a combination of series in a *web-like form* arises. A *series-web* is a system of crossed series whose members are held apart by means of cross series. The most perfect series-web is the concept of space, extending in three directions.

4. *When a series, A B . . . . . H J, is conceived not only in its original but also in the reverse direction, J H . . . . . B A.* (Compare the Fig. in § 32.) In this case the reproduction of the two terminal members, A and J, occurs at the same time, and the two approaching series interpenetrate so that the successive rise and fall of the concepts passes over into a simultaneous heaving and sinking, in the same way in which sound waves neutralize each other by interference. All notion of space rests upon this sort of series complication.[1]

(FIG. 6.)



1) The series complications arising from a double-sided apprehension, after the analogy of interrupted sound waves, are most remarkable. In a single-sided apprehension of the series A B C D E F, the members A B C must sink if the members D E F rise; in a double-sided apprehension where the series runs off from A to F and from F to A at the same time, A B C and D E F should rise and sink at the same time, precisely like the particles which lie between the points of condensation in the interrupted sound waves. This signifies in the case of the concepts only so much—that the running off of the series in one direction, with the successive rising and sinking of the members which follow one after the other is brought to a standstill, and has yielded to a state of reciprocal tension of the concepts. The paradoxical demand that all concepts, A B C D E F, regardless of their opposition, should simultaneously increase in intensity, will scarcely be found true in reality. The consequence will rather be that the concepts will be found in a gentle and constant vibration, which assumes the character of a stand-still because of the like movement from A to F, and from F to A.

Since the equipoise is complete, a pendulum-like vibration of the whole system takes place from right to left, which may be read off on the curve m p, and whereby the axis O E assumes the positions O F and O D.

5. *When bodily movements run parallel with the members of a series.* Here, for instance, belong the movements of the organs of speech in the reproduction of poems or of forms of prayer, the movements of the feet upon listening to rhythmical music, and all of those series of concepts and movements which have grown familiar to us through frequent repetition, and upon which skill and habit rest. These series run off mechanically without any mediation of thought and reflection (man as an automaton. Compare § 35).

Remark 1.—The uniting of concepts in the series form is of the highest importance for the development of the life of the soul. What was formerly isolated and scattered is by this means brought into fixed relations; each individual concept finds its place in a higher, well-ordered whole where reproduction can reach it. Thus we find our way not only among a multitude of objects, as, for example, the manifoldness presented by a great building, such as an exhibition hall, by a large park, or a landscape, that is to say, in spatial relations; but also in those complicated masses of notions out of which a science is built; *i. e.*, in logical relations.[1] Since on account of the concentration of consciousness (§ 20) we are able to survey but a limited number of concepts at one time. The mastery of the wide territory of concepts which form the potential consciousness is only possible when the concepts are brought into well united series, so that we can easily reach the remotest point of a series structure through the stimulus of a beginning member without being disturbed by the concepts which press in from all sides. Where on the contrary, on account of a stereotyped running off of the series, a fixed and unbending division of the concept structure is never broken up by new combinations

1) "The placing of the isolated in the series form always holds as the first rule of mnemonics, and in general as a chief means in the economy of mental life. That which remains isolated—numbers, names, detached notes—is soon forgotten, and is lost for our inner development" (Volkmann).

formed by means of free-mounting concepts, there appears that stiff pedantry which we not seldom see in aged people, in copyists and slaves of habit, in school-men, and in phlegmatic people, and which forms a striking contrast to the free mental activity in women, children, and artists.

Remark 2.—By means of the series complex, violent struggle for reproduction is replaced by a quiet activity of the concepts, since the reproduction proceeds quietly now in this, now in that prescribed course through the concept complex. Through the agency of the *nodes*, towards which the series converge, consciousness receives its peculiar and permanent impress; for, by them a kind of centralization of the whole circle of thought is introduced. Within these nodes are situated the favorite notions, inclinations, and passions of men. The nodes have themselves a further concentration, because from them converge dominating series of concepts and higher middle points. The chief central point of the whole is that in which the I, or ego, has its seat. It remains only to remark that neither the subordinate nodes nor the chief central points have fixed positions, but are subject to many removals and fluctuations.

§ 34. REPRODUCTIONS AND SENSATIONS.

The fact of reproduction leads to the assumption of the continued existence of concepts, even after they have been obscured. The reproduced concept is, therefore, identical with the original; *i. e.*, with the sensation. Nevertheless, it is a universally known fact, that in every particular case we can tell with unerring certainty whether a concept is a sensation or a mere reproduction. This decision can not, at least in the simple sensations, relate to their content, since the simple sensation is reproduced as it is or not at all. As regards intensity, a reproduction is indeed always weaker than the sensation; yet the distinguishing characteristic between the two can not lie even in this, for we can very well distinguish the gentlest sensation from the strongest reproduction.

But since this distinguishing characteristic lies neither in the content nor the strength of the concept, it can lie only in certain accompanying mental states which attach to the immediate sensation, but are lacking in the reproduction. These are the numerous but weak physical sensations by means of which the apprehension of the organs of sense in the moment of immediate sensation is announced to consciousness, and which consist in muscular sensations and their irradiation (§ 16). This is indeed a reproduction of these accompanying muscular sensations, but under the most unfavorable circumstances. Since, individually, they are very weak and in their totality only produce an obscure general effect; and, further, since they find in the body-sensations which are present a strong and almost insurmountable opposition, they can not in reproduction be elevated into any noticeable degree of clearness. This peculiar coloring which the sensation receives from the accompanying muscular sensations may be called the *liveliness* of the sensation. In reproduction this liveliness is generally lost.[1]

In certain cases, however, it may occur that in the reproduction of a sensation with the accompanying muscular sensations the original liveliness appears and the reproduction is mistaken for the sensation. This is regularly the case in the reproductions of the dream, where consciousness is freed from opposing concepts by the physiological depression, and single reproduced concepts on this account can rise to the height of their original intensity. It therefore happens that in dreams we see and hear, whereas in waking consciousness we merely represent.

1) This loss of liveliness may go so far that the reproduced pictures of sight entirely lose their coloring and come into consciousness as mere outlines. Lotze holds remembered images to be entirely colorless; likewise, also, Fechner, who cites the experiences of various persons in this respect. Psycho-Physics, II., chap. 42.

All hallucinations rest upon the confounding of the reproduction with the sensation of the waking consciousness. Since we project our sensations outwardly as perceptions, things are by hallucination apparently perceived as present which are not present; consequently hallucinations of this kind, if they become habitual, always lead to serious disturbance of the mental life, and stand in close relation to mental diseases.

Remark 1.—Hallucinations which appear as sense images are to be distinguished from illusions of the senses. In the first the sense-impression is entirely lacking; in the latter it is present, but falsely interpreted, as if, *e. g.*, one should mistake a hollow willow for a ghost, or see in the shadows of the moon, an elfin dance. He who suffers from hallucinations may perceive such things without the slightest sense-impression. This kind of people see sparks and fiery streaks before their eyes, they hear muffled, confused sounds, which seem now like the thunder of cannon, now like the distant ringing of bells. In later stages, where the representative faculty is seriously attacked, these indistinct impressions begin to take form, being determined by the momentary condition of the mind. The victim of melancholy then sees gloomy figures, frightful faces, devilish forms; he hears the voices of his pursuers, now in soft whispers, now in loud tones, as they conspire to kill him or to bring all imaginable torments upon him; about him is the odor of blood and corpses; in his mouth he feels the taste of deadly poisons. The insane person, on the contrary, is often surrounded by the most charming of pictures. Splendid phenomena linger before his eyes and translate him into a blessed entrancement, divine voices promise him happiness, honor, and riches (Ricker, Mental Disturbances). Hallucinations are not always indicative of real mental diseases; they arise temporarily with persons who are mentally sound, in consequence of continuous mental excitement, prolonged fasting, or violent emotions; they may even be artificially produced by means of a certain kind of skill, and then they assume the forms of visions and ecstatic delights. For example, the sight illusions of the learned Nikolai, who for days and weeks saw all sorts of forms before him, are well known.

Remark 2.—The sensation of physical excitation of the organs varies in liveliness with the different senses. The activity is greatest

in the muscular sensations themselves, for which therefore under normal conditions there is a very imperfect reproduction. The youth can no longer reproduce the vital sensation of the child, nor can the person in health reproduce the sensations of sickness, and nothing is so easily forgotten as bodily pain and physical pleasure, however intense they may have originally been. The remembrance of the most intense bodily pain is something exceedingly small in comparison with the prick of a pin (Lotze); naturally so, for the intensity of the pain is connected with the effect of numberless elements of sensation, which in themselves considered are weak, and which are difficult to reproduce. The further one goes in the series of senses from the lower to the higher, the more secondary becomes the consciousness of the excitation of the organs, and it disappears almost entirely with the highest sense, the eye. This is shown by the entire lack of tone in the sensation of sight. It is for this reason that the confounding of reproduction with sensation is easiest in the sense of sight, and that hallucinations of an optical nature, *i. e.*, visions, are most common. The sense of touch, on the contrary, seems almost closed to hallucinations.

§ 35. REPRODUCTION OF MOVEMENTS.

While the body of the animal, especially of the lower orders, appears like a machine, capable of motions of a single kind only, the human body is an apparatus of motion which under the influence of continued exercise can be made apt in the production of motions of the most various kinds. The body of the spider is an apparatus for spinning, that of the fish for swimming, and just as little continuous practice is needed with the one as with the other to make them skillful in their peculiar arts; for the apparatus works of itself like a machine, as soon as it is placed in the sphere for which it was designed.

It is otherwise with the child. The child is far more unskillful and helpless than the young of the animal; the simplest movements of seizing with the hand or walking with the feet must be patiently taught to the infant.

On this account it possesses the capacity of being made apt in movements and arts of the greatest variety. The foot of the infant, which kicks regardless of rule, can be schooled for the graceful movements of the dance, of the gymnast, or of the performer upon the tight rope; the hand, which is incapable of grasping an apple, will perhaps guide the pen, the chisel, the brush, or the bow of the violin, with wonderful skill. This would be impossible were the apparatus of motion in the human body not a universal instrument.

This apparatus consists first of muscles, which are stretched over the joints of the skeleton, and by their contraction execute the movements; and then of the motor nerves, which excite the muscles to contraction.

The actual contraction of the muscles is, however, a change of the muscular condition, which is announced to consciousness by the muscular sensations. To the different kinds of motions there correspond as many different kinds of muscular sensations. We distinguish the movements of the right arm from those of the left, because the respective muscular sensations are different.

Since there are many muscles in our body, and since the degree of tension is constantly changing, we have at each instant of our existence innumerable muscular sensations, which unite into an obscure total sensation, the sensation of the carriage or attitude of our body.

By means of muscular sensations we learn gradually to execute the movements of our body according to design; *i. e.*, in the manner which we desire, and thereby learn to govern the body. This comes in the course of continuous attempts. The muscular sensation corresponding to the desired movement is reproduced in consequence of these attempts, after which the nerve stimulus associated with it and the muscular contraction follow.

If a given movement has occurred two or more times, the muscular sensation becomes associated with the movement itself, and therefore secures the reproduction of the movement by means of the muscular sensation.

In this way muscular sensations become aids for the reproduction of movements. A wonderful activity of memory is shown in retaining these helps to reproduction, on account of their great extent.

Remark—As in the association of concepts, the certainty of reproduction in the connection of muscular sensations with movements, depends upon intimacy of the fusion, which in turn depends upon the frequency of repetition of movements in one and the same sense. By means of constant practice and continued repetition, man acquires complete skill in various callings and arts, and the respective movements proceed entirely automatically, without the aid of mental activity. They occur also in sleep (somnambulism).

§ 36. MEMORY.

That concepts are not destroyed by obscuration, or passing out of consciousness, is proved by the fact of reproduction. But not every reproduction is for this reason an act of memory. We expect of memory that it will hold what was formerly in consciousness, though displaced, and, upon given occasion, reproduce it exactly as it was originally. *Memory is therefore the faculty of unaltered reproduction*, and its characteristic quality is trustworthiness.

The trustworthiness of memory will manifest itself in holding firmly what was formerly simultaneously or successively in the mind; *i. e.*, in the unaltered reproduction of series and groups of concepts. This holding of the concepts together in their original combinations is so much the more assured the clearer the concepts were when they entered into those combinations. The trustworthiness of memory depends, there

fore, upon the strength or clearness of the original apprehension, and upon the frequency of repetition.

As to the first condition, it is important whether the associated concepts were mounting or sinking when the total concept under consideration was formed, because upon this, and the length of time they were in consciousness together, depends the thoroughness of their fusion. Fleeting associations of concepts which are sinking out of consciousness drop from memory, whereas the associations of concepts which are intensified by attention hold together intimately. The intimacy of fusion is furthered by repetition, since the concept magnitudes with which the concepts fuse become greater with each repetition. (*Repetitio mater studiorum.*)

In addition to trustworthiness, the perfection of memory depends also upon durability, which is equivalent to trustworthiness for a length of time; then upon readiness, comprehension, and utility. These three words may be examined.

The length of time during which a concept is held in memory depends upon the number and strength of its associated concepts, or helps. There is no surer means of securing concepts against forgetfulness than to place them in connection with important concepts, which through their many-sided and intimate complications form the node points of our concept structure. Even insignificant incidents become impressed on memory when they stand in connection with concept masses of this sort.

The facility of memory depends upon the degree and mobility of the attention, as well as in general upon that freshness of apprehension which is partially connected with physiological conditions.

The comprehension and utility of memory, aside from what has been mentioned, depend upon the harmonious construction of consciousness, and therefore upon the reinforce-

ment of the memory from the side of the understanding and the imagination.

Memory is, for the rest, not an independent and real faculty of the soul, but only an abstract notion for the manner in which the reproduction of concepts is, under given circumstances, brought to pass.

Remark 1.—The opposite of the memorizing activity is forgetfulness. It consists in the inability to reproduce a concept which has been in consciousness; this inability is, however, only relative and transitory, for it rests upon unconsciousness, or upon the lack of effectual helps to reproduction when compared with the number and strength of opposing concepts. If the latter can in any way be overcome, those helps will be strong enough to reproduce the given concept. One may, therefore, say of a concept, it is never absolutely forgotten, just as one may say of a ring which has been thrown into the sea, it is not absolutely lost. Even if the restoration—there of the concept, here of the ring—is difficult, it is not impossible. In sleep, where the opposing concepts of the waking life are removed, such "forgotten concepts" often appear with extraordinary clearness; so also in the condition of clairvoyance, and in the moment of death. Still more favorable will the chances become for the reproduction of many a forgotten concept after the death of the body.

Remark 2.—Since memory produces nothing new, but only the old as it has been preserved, it is not surprising that productive spirits and geniuses, whose activity is directed to the discovery of the new, should often manifest weak memories. With them understanding and imagination injure the memory. On the other hand, it is common to find men with weak judgment who have faithful memories. In childhood, however, a good memory may be taken as an indication of good mental gifts.

§ 37. KINDS OF MEMORY.

Memory is in its nature mechanical; for, in the final analysis, all noting and retaining rest upon a mechanical association of concepts, which is independent of the content of that which is to be retained. One can impress things

upon the memory from whose understanding one is far removed; as, *e. g.*, is the case with unmeaning "learning by heart," where the learner does not trouble himself about the inner connection of what is learned. The soul of mechanical memory is not understanding, but repetition. Such a memory is true and enduring, but not serviceable enough, since it not seldom refuses to act on occasion of the slightest misplacement of the matter memorized. (Questioning in recitation.)

It is a fact that understanding, as insight into the inner connection of the matter memorized, greatly facilitates the memorizing. This can probably only take place where such an understanding is made possible by an inner, material connection of the parts of that which is to be memorized. Here is added to the external association through mediate reproduction (simultaneity and succession), the inner association through immediate reproduction (sameness and similarity in kind), the latter being more intimate and lasting in the degree that it is conditioned, not by the changes of association, but by the permanently remaining internal relations of the content. In this way, we note a mathematical proof, or grasp cause and effect in history, or understand change in the course of natural phenomena. Since to understand is a matter of the understanding, or judgment (judicium), we find here a connection between memory and understanding, or judgment, and this kind of memory is called, accordingly, the *judicial memory*. It is distinguished for its serviceability.

There is, finally, another kind of memory, which seeks, after the manner of the judicial memory, to discover an inner necessary relation between the objects to be noted where the connection is purely accidental. To this end ingenuity is above all necessary, in so far as this is the capacity of discovering similarity between dissimilar things. When A and B ("*mens*" and "understanding") are two dissimilar concepts (words), we may attempt by means of a third concept

C ("man"), which may be brought into relation with A as well as with B, to unite intimately these two concepts. This kind of memory, which needs the assistance of the imagination, is called *ingenious memory.* It is distinguished by its great compass, rising to an art in mnemonics, but also by its lack of readiness.

Remark 1.—These three varieties of memory were first distinguished by Kant. In common life we distinguish, moreover, a word and thing memory, a memory for persons, numbers, colors, locality, etc., to which may be added a memory for the qualities of wine and tea (wine and tea tasters), and other similar special memories. These distinctions, far from answering to real faculties of the soul, express only the simple fact that memory maintains a specific perfection and a single direction in accordance with thorough training in a favored and one-sided compass of thought.

Remark 2.—The ingenious memory becomes mnemonics when these artificial links which serve to bind the memorized matter together are arranged according to fixed rule. Since between a notion and a number there is no natural connection (Napoleon I. could just as well have been born in 1770 as in 1769), mnemonics resorts especially to numbers in its application. Modern mnemonics, founded by Otto Reventlow, and further developed by Hermann Kothe, changes numbers into words and notions by a scheme which is very easily retained (1 = t, d; 2 = n; 3 = m; 4 = r, q; 5 = s, sch; 6 = b, p; 7 = f, v; 8 = h, ch; 9 = g, k; 0 = l, z; vowels having no significance). The year of the death of Charlemagne (814) is no longer expressed by the old symbolic significance of the number of this year (hour-glass, spear, and plow, as death, war, peace, and in accordance with the resemblances in the figures 8, 1, and 4) but by the word "Hüter" (protector) in the sense of the foregoing scheme, which is easily associated with Charlemagne (protector—"Hüter"—and increaser of the empire). When the artificial links (the mnemonic catch words) are not too far-fetched, so that they will easily occur to the mind (which is not the case with Mauerberger's arrangement of the dates in general history), mnemonics renders a very considerable service in the remembrance of numbers in history, geography, statistics, physics, and would seem to deserve greater regard from the side of the school than has heretofore been accorded to it.

Animals also have memory. The dog recognizes his master evidently because he has noted him. The memory of animals is developed, however, mostly in a one-sided manner. The dog shows chiefly a good memory for persons; other animals, as, for example, the migratory birds, are distinguished by their memory for locality.

§ 38. THE COURSE OF DEVELOPMENT IN MEMORY.

Memory is the foundation for all mental development, because it unites into a whole the successive elements of our mental life, which would otherwise stand unrelated. By means of memory any given present of soul life is brought into contact with the whole past, touching it on all sides and entering into reciprocal relation with it. Without memory our whole mental life would be enclosed in the narrow circle of thought which the single moment brings with it, as we perceive to be mostly the case with animals, whose reflection and effort to do extends but very little beyond the circle of sensations offered by the senses at any given moment.

But memory manifests a course of development through the various stages in the life of man which is worthy of thought. The activity is most gigantic in childhood, where the matter for all following mental development is garnered up by the memory in enormous quantity. In the first three to five years, the child learns to govern his own body by the memory-like retention of muscular sensations (§ 18), learns to find his way about in his environment, to know numberless things, together with their various qualities, and to arrange them in groups and series; he acquires the essential features of the grammar and vocabulary of his mother tongue. One may indeed say with Jean Paul: "Man learns more in the first three years of childhood than in the three years of college life."

This astonishing energy of the memory holds also in the later years of childhood, and enables the child to learn easily

a second or a third language, to hold names and dates, and to accommodate his body to various arts. Childhood is the period of rule for the mechanical memory, where the child takes on gladly everything which is offered without asking about the "how," or the "why."

With the close of childhood, in the twelfth year, the *orbis pictus* of the man's world of observation, except certain additions reserved for a later age, is closed and laid down in memory; the grammar and vocabulary of the mother tongue are learned, the child is at home in his environment. Colors, tones, names, numbers, persons, and things—all are written upon the tablets of the memory.

In youth the material of memory experiences but little enriching in regard to its elements, the sense perceptions, but the more significant, however, are the combinations of this matter into new structures, on whose extension understanding and imagination are coactive with memory. The youth passes his years in an environment whose physical features are already known, and which presents to him but few new impressions; the further instruction which is given him is mostly based upon the observation of the well known twenty-six letters of the alphabet and upon the sounds of the familiar tones of the mother tongue; but with the aid of these letters and tones he is led into the phases of the world's history, and into the phenomena of natural history, into natural and other sciences.

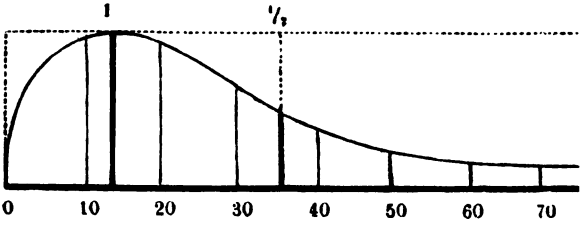
Memory is still more stationary in the age of manhood. The gathering time is past, the period for the free application in independent judgments and conclusions of what was formerly gathered is at hand. In middle age one learns a new language only with very great difficulty, retains names and numbers only with much labor. The decline of memory in this period is connected with the decreasing receptivity and sensitiveness of the nervous system, so that in part the

long past impressions of childhood even now make themselves felt with greater vividness than the newly gained perceptions of this period.

In old age the activity of memory shows a rapid decline. The old is forgotten, the new is not retained. Only the most important events, only the concepts most frequently in consciousness emerge like islands out of the universal flood of forgetfulness. It is also true that the very aged man remembers the events of his childhood more vividly than those which lie only a year or two behind him.

These relations may be presented to the eye by the following scheme:

(FIG. 7.)



IDEAL COURSE OF THE DEVELOPMENT OF MEMORY.

§ 39. THE IMAGINATION.

In mental activity it often happens that concepts from different periods of time are, by means of mediate and immediate reproduction, associated in a variegated manner, so that the resulting combinations no longer bear the character of a reproduction of the old, but of a production of the new. We can no longer ascribe this concept activity to the memory, but must rather ascribe it to the imagination, to the capacity for altered reproduction.

That which was a fault with memory, becomes a virtue in the imagination. Here the concepts should not be reproduced as they were, but different. The characteristic property of imagination is, therefore, originality; *i. e.*, the novelty of its products.

Imagination should, then, create the new. This creative activity can not, however, relate to the production of the simple elementary concepts (sensations), which form the material for total concepts and for series; for these sensations can be produced anew only by the senses, so that no imagination can discover a new color or an unheard sound, or open to him who was blind from birth a concept of the differences of color. This is the limitation of the imagination.

But a wide field is open to the imagination in the variation of combinations which can be formed from the material given by the senses, and whose number is inexhaustibly great. All melodies and harmonies consist of but few tones; all landscapes are composed of trees, rivers, houses, mountains, and valleys; all dramas out of certain characters and situations; all words out of some twenty-six letters; no phantasy is able to measure the manifoldness of music and speech, to exhaust landscapes and dramas. This is the freedom of the imagination.

This freedom becomes unbridled and brings forth only the hateful, the false, the quaint, the offensive, when it is guided by no concept of a particular purpose. The imagination of the insane, of the dreamer, and of the child often bear this character. The control of this activity, hateful in its lawlessness, comes through the understanding, which sets a limit to its bounds, and a measure to its excess. This imagination accompanied by understanding we call in particular phantasy; it is this that we admire in the creations of nature and art.

The originality of phantasy manifests itself, in that it alters the original associations and series by elimination

(abstraction), addition (determination), and uniting (construction), wherefore fancy has been divided into the *abstracting*, the *determining*, and the *constructive* imagination.

Remark 1.—Upon the abstracting imagination rests all common or general pictures in that the peculiar (individual) of a perception is mixed; for example, "a house," "a tree," "a man," is to be distinguished from "this house," "this tree," "this man." Such common or general pictures are transformed into general notions. Since in the reproduction of a total or combined concept the weaker single concepts succumb to the opposition in consciousness, reproduction shows a general tendency to change our sense-pictures into general pictures, to generalize them, or to free them from their dependent relations. The imagination "clarifies" its object, in that it purifies it of all sorts of attendant disturbing contingencies. The determining imagination manifests itself in positive adornments and additions, which it attaches to its object, which were taken from reality. Thus the reporter of a fact may adorn it from the stores of his fancy, though at the same time, thereby misrepresenting it; in the same way we adorn churches, dwellings, and streets according to the suggestions of fancy; in perusing a book, we read between the lines, etc. The constructive imagination unites the functions of its two predecessors, in that it both eliminates and adds to. It can, for example, mutilate the human form and replace the lacking parts by animal organs (fauns and satyrs, sirens, furies, medusa). If a particular judgment underlies this activity, the so-called ideals arise, in which all that disturbs is removed, and all that enhances is added. Thus we idealize our friend by ignoring all his human weaknesses, and by endowing him with perfections which he does not possess. The image which we form of our great men, of Schiller and Goethe, of Franklin and Washington, is an ideal which may be considerably remote from nature, but which nobody will undertake to destroy. The Platonic Socrates is as much of a beautiful ideal as the Platonic state.

Remark 2.—Memory and imagination interlace in a manifold way, yet reciprocally separate. The more the mental activity in reproduction moves along the old tracks, the more prominent does memory become; the more it moves in new ways through the founding of new simultaneities and successions, the more prominent will imagination appear. The boundary line between the two is not distinct; repro-

duced perceptions are, for the most part, imaginations, because incidents are always lacking, and since in general altered reproductions have more chances for themselves than the unaltered.

§ 40. SIGNIFICANCE OF IMAGINATION FOR INSTRUCTION AND MORAL TRAINING.

Imagination is an exceedingly important faculty of the soul. It broadens our mental vision beyond the bounds of the actual, drawn by observation and experience, into the wide and invisible territory of the possible, in that it places us in a position in which we never were, and brings objects before us which we have never perceived with the senses.

In this way it becomes the condition of all progress in mental culture. It is that spiritual power to which all instruction turns, and upon whose coöperation the success of all instruction depends. For instruction works, aside from the cases of sense demonstration of what is to be presented, with *words; i. e.*, with conventional signs, and expects that the pupil will accompany these words with his concepts. But the things about which these words treat are new to the pupil, since instruction desires to communicate what is not yet known. Here it is then the business of imagination to seek pictures in the realm of the known, in order to combine from them the concepts to be awakened by instruction. As the type-setter places the needful type in boxes, in order to form words according to the writing of the manuscript, so imagination brings together from the stores of memory the pictures which instruction seeks to awaken in the consciousness of the pupil by means of words. The pupil apprehends the words of the instruction when his imagination succeeds in illustrating them by corresponding concept images. It is, therefore, the imagination which mediates all apprehension in instruction. When it is not in condition to produce the

illustrations of the words through their images of perception, the words are heard as empty sounds, and held by the mechanical memory as heavy ballast, as is only too often the case with that "learning by heart" which is empty of thought and concept.

Remark 1.—The frequent failure of instruction lies mostly in the excessive demands which it makes on the pupils' imagination. Children who have seen only the very uniform surroundings of their village, are desired in geographical instruction to imagine coast ranges of mountains, elevated plateaus, steppes and deserts, seas and lakes, wharfs and harbors; those who have seen only a few domestic animals and but few cultivated plants, are expected in zoölogy and botany to supply a chaos of animal and plant names with images out of the small treasures of their imagination; they must accompany the general in his train of triumph upon the Roman Forum, and have correct thought about the civil war of Marius and Sulla, while their store of observation is supplied only by the market place of their little native village, and the often pitiable state of a sorry political community. 1)

Remark 2.—The imagination is also very important because it determines in our eyes the value or worthlessness of objects, and for this reason influences the direction of our desire and Will. By its assistance the mind may now adorn, now deface an object. When the educator controls the imagination of his pupil, he gives direction to his Will. Fill the consciousness of the child with moral pictures by means of examples and stories, and his Will of its own accord will take the direction of the good.

Remark 3.—The poisoning of the imagination by the common, the low, and the hateful, is the source of the moral degeneration of the children. It is association and evil communication, and above all example, working with the whole force of immediate sensuousness, that produces this infection.

1) Now, for the first time, has the advanced spirit of education taken pity on the poor children, by bringing before them in natural history either natural objects or good pictures of them, and even in geography and history by helping their "observation" by character pictures.

§ 41. THE CONCEPT OF TIME.

Time rests upon alteration and change. Were there no alteration, there would be no time; but where anything changes, time determinations appear at once, since one state appears as an *earlier*, the other as a *later*.

If one thinks of two changes A and B, *e. g.*, lightning and thunder, and thinks of these separately, nothing especial is noted. But if the thought passes from A over to B; *i. e.*, if A is still in consciousness when B enters, A appears as preceding B, and B as following A—A is the earlier, B the later.

If this observation is extended to several successively entering and changing concepts, we get the form of the series. But successive representation is not yet a representation of succession. Animals, children, and even adults, represent successively without having a clear consciousness of succession in time. The reason of this is that in the running off of the series A B C D E F G, the first concepts, A B C, sink and disappear from consciousness while the later, D E F, enter. All the members of the series, therefore, are at no instant simultaneously in consciousness, which is necessary, however, in order to perceive their relation and to be able to apprehend them as pertaining to time.

In order that the notion of a time series may arise, three things are essential:

1. That all members be simultaneously present in consciousness with a certain degree of clearness.

2. That the series unfold successively.

3. That this unfolding can take place only in a single direction, A G, and not the reverse, G A.

The time series has a beginning and an end, and can not be reversed without experiencing a destruction of its nature. A melody cannot be sung, or the Lord's Prayer prayed backwards; the series of the German Emperors cannot be (mechanically) recited backwards.

In the time series any two members, therefore also the beginning and the end members, have a certain distance between them, which is measured by the number of transitions through which we must pass in order to get from one member to another. A time which is bounded is called a time period.

The time period is defined according to kind and magnitude; the former by the content of the members, the latter by their number. If one unites several time series which, having equal quantities of succession (weeks, days, years), are distinguished only by the mere empty continuation of their individual members, then the differing content of the various coinciding members will be mutually obscured, and the mere quantity of succession in the changing members will come to consciousness. Such a time series of definite length and indefinite content is called an empty time period; *e. g.*, a year.

The undefined members of this empty time period are the empty time points. Different empty time periods are distinguished by the number of their time points. If these are placed parallel, one will extend beyond the other. In this way arises the possibility of the continuance of time points in both directions, and, since this possibility has no bounds, we arrive at the conception of an empty time line, extending in the forward direction (future) and backward (past), without limit; *i. e.*, to a conception of unending time, or infinity.

Remark 1.—An object appears to be in time when it is thought as a member of a time series, even though the series be empty. Objectively considered, a fixed place in the infinitely extended time line belongs to it, this place being determined by two time points, one of which immediately precedes, and the other immediately follows it. Since between any two members of a time series already formed, other time series may be interpolated; *e. g.*, series of seconds between the minutes of an hour, the empty time line becomes a continuity,

and is subject to all the contradictions pertaining to changeable magnitudes. (See the author's "Introduction to the Study of Philosophy," § 26.)

Remark 2.—Time is objectively measured by numbering changes which repeat themselves with perfect exactness; as, for example, the vibrations of a pendulum or the rotation of the earth upon its axis. Time appears here as the multiplier of change. The subjective estimation of time varies as regards that which is passing and that which is already past. The more energetically the concept series run off, and the less they are separated into parts by interruptions and pauses, the briefer the passing time appears. The change is indeed great here, but we do not count the individual changing elements. The clock does not strike the hour for the busy or the happy. The more the series are broken up and interrupted, the more we are warned of the flight of time; as, *e. g.*, in the state of waiting, where each series proves too short to end in the concept of the expected object, and must therefore be continually extended; or in that painful state where, on the contrary, we must bear the extended series of unpleasant sensations, which we vainly seek to break off; or finally, in the state of *ennui*, where the flow of representation is continually interrupted for lack of a significant content. In all of these cases there are many interruptions, which produce the semblance of lengthened time. This holds only for the immediate present, not for the reproduction of a time series already past; for the reproduction of the insignificant and even the painful does not occur in detail, hence those interruptions do not arise in the remembrance of times past. Time periods already past appear the longer, the more they are filled with significant concepts: A busy day, a week full of events, a life rich in deeds (Alexander the Great, who died in his 33d year) appears long to us, because in these time series many members may be distinguished even for memory. To sink away and be forgotten is the fate of the insignificant. Hours which in their course seemed days to us on account of their *ennui*, become mere moments in memory. Man ages when events occur rapidly to him.

§ 42. THE CONCEPT OF SPACE. THE SPACE SERIES.

It is a fact that external things announce themselves to us as in certain determinate spatial relations, and that the

fixing of these spatial relations does not rest with our subjective caprice, but belongs peculiarly to the objects themselves; for it does not rest with us to regard the near as the remote, the large as the small, or the reverse.

But though spatial relations are given with sense-perception, they do not, on this account, lie complete and perfect for the mind in sense impressions. The various excitations of the retina, which together comprise the retinal image, excite in the soul only the concept of the colored and the lighted; they betray nothing of the spatial juxtaposition in which the things of the external world or the points of the retina affected by them stand. In the separate sensations A and B, there is no indication that the things a and b are neighbors.

That which does not lie in sensations taken singly may lie in their combination. True, if the concepts A B.....J are taken as strictly simultaneous, a total concept would be formed from them in which no trace of separation would be contained, just as the tones of an accord furnish no spatial notion. While, therefore, A B C D E F G H I J are present in consciousness as a total concept, the individual concepts unfold in the series form. In reality, a successive survey of what is simultaneously present takes place in each spatial apprehension.

Should the unfolding of the series occur only in one direction, A J, the spatial juxtaposition would be conceived as a succession in time. This really occurs, when we, *e. g.*, pass through a picture gallery in one direction only, or when we ride along the banks of a river in only one direction.

Spatial juxtaposition, however, allows of apprehension in a reverse order, J A, which, with a pure time object, *e. g.*, a melody, would not be possible. We execute the reverse series when we move the hand forward and back over the surface or edges of an object. But in this the process of

reproduction is essentially altered. Since the end members of the series, A and J, rise in consciousness, and the series, A B C.... and J I H..... approach, the development of these series is transformed into a stand-still, and since, now, the distinctions *before* and *after* are eliminated, the time series of succession is changed into one of spatial juxtaposition; *i. e.*, a space series arises from a time series. (Compare § 33, No. 4.) Every intermediate member of this series, as E, appears between F and D, then G and C, etc.; in short, from this point the series seeks to unfold in both directions, and the space series is distinguished from the time series in that it has no earlier or later members, and has not one beginning and one end, but two beginnings and two ends.

The space series is determined as to kind and as to magnitude; first, by the content of the members, and second, by their number. In uniting a number of equally long space series, the opposing content of the various members becomes obscure, and only the form of juxtaposition, *i. e.*, the multiplicity or mere number of the members, remains. In this way we reach the notion of the empty space series of determined length, or the empty extension of space, in which the place of the obscured members is taken by nerve space points. By thinking these points indefinitely either way, the notion of a line extending infinitely in both directions arises.

Remark 1.—Space has also another development which is lacking with time. Whenever two time series come together at a point, the remaining points of the two series coincide; *i. e.*, the time series has only one dimension, which is indicated by the terms *before* and *after*. It is otherwise with space. Two space lines may cross at a point without coinciding, because their respective members are held apart by cross series (§ 33, No. 3). We here attain the notion angle, as the deviation of two lines, as well as that of the surface as a web of space series, which are distingushed by a double lateral opposition (right and left, above and below). To the two dimensions of the surface there is added a third, since at all points of the plane perpendicular

lines may be constructed, all of whose points have the same lateral opposition found in the surface, and also a third lateral opposition, viz., that of front and back.

Remark 2.—A bounded plane is a figure. It is determined by the course of the boundary. This is not in itself something visible, but only a relation of two visible things; *i. e.*, two colors or two degrees of illumination. The sharper the contrast between the two colors or illuminations (black upon white, or white upon black), the more distinctly does the figure stand out against its background. The space series which proceed from the interior of the figure are broken at its periphery; the eye runs along the boundary, and the ease with which it follows the curves or changes at the angles of the polygon at regular intervals, conditions the æsthetic pleasure which is connected with the apprehension of the boundary of surfaces.

§ 43. EXPERIENCE IN SPACE.

It is through the assistance of the senses of sight and touch that we gain experience in space. With both senses we come upon the surface-like extension of the peripheral ends of the sensory nerves,—in the one case upon the retina, in the other upon the skin, and note the transmission of the stimuli over insulated primitive fibers as favorable conditions for an apprehension of space.

But the surface-like arrangement of simultaneous nerve stimuli is in itself not a cause of the apprehension of space by the mind, as it would be, perhaps, in the case of an external observer. Not simply because the stimuli are spatially arranged upon the retina and the skin does the soul perceive the spatial, but because their spatial arrangement favors a *double-sided reproduction*, the real condition of space apprehension, and because the perceived difference in space is associated with certain local signs.

Our experience of space is chiefly gained through the eye, and its great mobility. Our eye is, at any given instant,

directed towards a single point only in the field of vision; viz., toward that whose line of vision passes through the center of the retina, the point of greatest clearness. The neighboring points in the field of vision mirror themselves upon side points of the retina, but with diminished distinctness. If the attention is to be directed to them, the eye must be turned, so that one after another they fall upon the point of most distinct vision, which will occur without assistance of the Will, probably through reflex activity. But if the axis of vision moves to and fro along a line in the field of vision, a space series is produced in the soul, in the way which is explained and illustrated in § 33.

If the eye is turned to another field of vision, a new space series of another content, but with the same *length* position in the field of vision, will be produced with analogous turning of the eyeball; and if this process is frequently repeated, there will arise out of the many equally long and similarly lying space series of different contents, the idea of an empty space (§ 36). With this notion of an empty space will be associated a sum of muscular sensations, which correspond to just this movement of the eyeball, and which, as local signs, give us the ability, in the future, to measure the magnitude and position of these lines in the field of vision, without having first specifically to investigate the multitude of things in juxtaposition.[1] *Thus the notions of particular distances, directions, and positions in the field of vision are associated with the muscular sensations which answer to the various lateral and vertical movements of the eyeball.*

With the perception peculiar to each point of the retina, there may, along with the objective determinations of the

1) Direct experiments prove that a turning of the eyeball to the extent of about one minute of angular space can be distinguished. This smallest perceptible movement corresponds to the smallest perceptible retinal distance. (Wundt in Pogg. Ann., 1862, No. 8, p. 626.)

same (color and light), be associated even a secondary determination, whose content does not arise at all from the character of the light stimulus, but from the position of the affected point in the retina, and which, therefore, gives evidence of this position as local sign. This is analogous to the perception of point on the skin through touch (§ 20). Therefore even with a uniformly lighted field of vision, yes, even with closed eyes, we picture the sum of similar external or internal sensations to flow together into a single intensive impression.[1]

The sense of touch works in a manner entirely analogous to that of sight. But it has still another function, viz., to bring to our consciousness, through the space series extending from the body, the *depth* of the field of vision, thereby supporting and completing the apprehension of the eye. For the eye the field of vision is a surface, without any depth, yes, even without distance of the various points from the eye.[2]

It is the sense of touch which first shows us the unequal distances between the body as the starting point for the estimation of distance, and various points of the field of vision perceived by the eye, and helps us to the consciousness that the surface which we see does not immediately touch our body, but lies remote from us. Thus we literally push the surface-like field of vision away from the body by means of the hand; and the basis for the notion of the third dimension of space, DEPTH, is laid.

1) In narcotic states produced by ether or chloroform, or by the smoking of hashish, and in certain brain diseases, the disappearance of the muscular sensation is accompanied by the expansion of light-impressions into a surface. (See Fechner's Psycho-Physics, II., p. 323.)

2) The patient, born blind, who was operated upon by Chesseldon (see the fine analysis of this case by Drobisch, Emp. Psych., 205), had, after the operation, the sensation that all objects touched his eyes, just as in feeling they did his skin. There was no reason apparent for regarding them as at a distance.

As soon as the notion of depth is awakened through touch, the eye begins to observe the differences by means of which the unequal lengths of the radii proceeding from the eye to individual points in the field of vision are indicated. Such indications are not lacking even for monocular vision. Among these is the *accommodation of the eye* for distance, which is announced to us by obscure muscular sensations, though they escape us for great distances,—further, the decreasing magnitude of the angle of vision with increasing distance, observed in an object of constant magnitude, and upon which rests the *linear* perspective for our eye; finally modifications in the intensity and quality of the illumination which are likewise affected by distance.

In addition to these indications, we have the muscular sensation of the convergence of the axes of vision in *binocular* vision, which latter is greater for adjacent than for remote points,[1] then the production of incongruent double pictures in the two eyes, which produce the peculiar effect observed in using the stereoscope. Simple vision occurs only when the images of a point in space fall in both eyes upon the so-called *identical* retinal spots. The totality of those points in space for which this condition occurs in any given fixed position of the axes of vision, is called the *horopter*. In so far as a solid extended object with its various dimensions deviates from the plane of the horopter, it is seen double; the two images

1) Trigonometry follows the method of the eye in reckoning the remoteness of points in space. It, too, uses a base line, analogous to the distance between the eyes, and takes account of the angles. Recently men have applied the principle of accommodation, as found in monocular vision for the estimation of distance, to the construction of instruments which give the distance of a remote point by simple inspection. In using these instruments, the distance of the object is estimated by the accommodation of the field glass effected by the moving of lenses. [See article, "Measure of Distance Without Base-Lines and Measurement of Angles," by Dr. Emsmann and S. Merz in Poggendorff's Annals, 1865, Nos. 2 and 6. (Distanzmesser ohne Standlinien und Winkelmessung, Poggendorff's Annalen.)]

coincide only imperfectly for our perception, and produce, therefore, the impression of solidity.[1]

These optical indications of the depth of the field of vision lose their validity when the objects are too far removed; for then the differences of accommodation, of the convergence of the axes of vision, and of the horopter, as well as the control of the sense of touch, all vanish. In such cases we locate the objects seen, in obedience to universal habit, as external to the eye in outer space, indeed, but at equal distances from the eye; that is, we project them upon the inner surface of an imagined sphere, of uncertain remoteness.

Remark.—When we compare the two space developing senses, sight and touch, with respect to their efficiency, we find that for the apprehension of surfaces the eye is far superior to the sense of touch, as it is also for the development of the notion of time. Children begin to observe the relations of things by means of the eye before they have learned to use the hand. But in regard to the apprehension of the extended nature of bodies, the sense of touch is superior to that of sight; it is even a question whether the eye in itself without the assistance of touch, would obtain the dimension of space, for the means at the command of the eye in this respect already presuppose the notion of depth. Among these means Wundt (*Beitrage zur Theorie der Sinneswahrnehmungen*—Contributions to the Theory of Sense-Perception) has emphasized one which is calculated to establish a perception of depth through the eye alone, and to supplant the hand. It is the angle inclosed by the axis of vision and the vertical axis of the body. It is doubtless a fact that through muscular sensations we are conscious of the elevation and depression of view which correspond to the angle named, but their significance in regard to the depth of the space before us, already presupposes the idea of the third dimension in space. This notion can be fully revealed only

1) With the stereoscope the incongruence of the retinal images occurs also externally in the photographs, of which each is especially calculated for one eye. Brücke has given the following explanation of the effect of the stereoscope in regard to the apparent solidity of the objects represented. He says it rests upon a series of alterations in the angle of convergence of our lines of vision, by means of which we make the formerly existing double images simple, and then ascribe to the objects a different remoteness in space.

by the hand when it gives us concepts of space series extending in any direction from a point in the field of vision.

§ 44. CONCEPTS AS PSYCHICAL POWERS. PSYCHOLOGICAL CULTURE.

The arrest, obscuration, and reproduction of concepts show us that one and the same concept, without experiencing any qualitative change in its content, may appear in various states, which are severally distinguished by a greater or less degree of vividness or clearness. "Arrest" is a reduced degree of vividness, which we think of, figuratively, as depression toward the "threshold of consciousness;" obscuration is total arrest, whereby the concept, sinking ever lower, falls below the threshold of consciousness. Absence of arrest, or freedom, is the highest degree of vividness to which a concept can arrive, and which it would assume should all its opposing concepts vanish, so that it alone would dominate our consciousness.

If a newly entering concept, A, is to reach any assignable degree of clearness, it must be strong enough to overcome the resistance of any opposing concepts which may be present to consciousness. There will never be a lack of such antagonistic concepts, for aside from all sense-perceptions and reproductions, all organic changes of our body in the form of general and vital sensations are reflected in our consciousness and constantly occupy it.

If we posit the total power with which a vital sensation resists any opposing concepts seeking recognition in consciousness as equal to X, then any entering concept can maintain itself in consciousness, only as it is able to overcome the resistance X. But even in this case, it will lose a portion of its intensity or strength through arrest from the side of the vital sensation; it will soon even succumb to this

arrest if it is a reproduction, since the vital sensation is constantly renewed on account of the continuous organic nerve excitation, thereby causing constant fresh arrest, but the vital sensation experiences no detrimental arrest itself.

It is otherwise with a sense-perception to which we wholly yield; this does, indeed, experience arrest from the side of vital sensation; but whatever it may lose in intensity by arrest is restored through the continuation of the nerve excitation. Experience shows us, in fact, that only sense-perceptions (sensations) maintain themselves for a considerable time at a certain degree of intensity, and that only these can be elevated to a state of freedom from arrest..

Similar to sense-perceptions in intensity are those concepts for which the sense-perceptions present act as aids to reproduction, thus resisting their arrest. These also maintain themselves in consciousness for long periods. Thus the image of our departed friend stands vividly before the mind, because the sense-perception of our surroundings constantly reminds us of him.

Then come those concepts to which an extended circle of aids to reproduction stands at command, because they are "old concepts" and have therefore been frequently in consciousness with many other concepts. The man of thought, or of passion, or the insane man, is able to busy himself with concepts which are unrelated to the sphere of sense about him.

Remark 1.—The consciousness of the infant is a chaos of manifold, opposed, and disconnected images; a chaos which approaches absence of consciousness. Within this chaos arise first points of crystallization of individual but stronger sensations which reciprocally unite. "Every group of concepts thus united may be regarded as an element of mental culture." (Volkmann.) With this all-sided uniting of concepts the process of mental growth begins, and really never closes during life, for there is always something to be added to the concept structure already formed, something to be readjusted, something new to be connected. The slow and stable manner in

which this process is completed in man marks the noble superiority of human nature in contrast with the impetuosity, the one-sidedness, the blindness, and passion of the mental life of animals, which remains confined in a narrow compass of sensations and concepts during life, without finding the crystallizing points for an all-sided grouping and uniting of concepts. "In the apprehension of the animal, there is scarcely anything but the homogeneous; whereas with man the heterogeneous abounds. On this account, the animal is quickly developed, while man delays.....The development of the animal is tumultuous; almost everything simultaneous is arrested, since it mostly contains only notions which are opposed, and the later moment finds only fragments of what was present at the earlier. But the stream of human mental development is broader; with man, the most manifold threads of thought progress simultaneously, and for this reason become interwoven" (Volkmann.)

Remark 2.—A concept does not pass into pure nothing through obscuration, but passes from the *actuality* of presence in consciousness to the *possibility* of being recalled to consciousness. This is the law of the continued existence of concepts, which is analogous to the law of inertia of bodies once set in motion. As in the latter, motion would continue infinitely unless overcome by resistance, so also would a concept continue in the soul forever with an even intensity, did not opposing concepts arrest it. In reproduction this opposition is overcome, and the concept is lifted from its arrested into its free state.

§ 45. APPERCEPTION.

Obscured concepts are not wholly lost, but may be reproduced at any moment. From the unnumbered store of obscure concepts which we carry about with us, are reproduced, now these, now those elements, according as they find assistance in the concepts already appearing in consciousness. (§ 44.) Every newly entering concept seeks, in accordance with the laws of reproduction, to bring with it a certain group of similar or related concepts; if these older reproduced concepts are sufficiently strong, the new and just entering concept must submit to a *modification* through them — it enters

as different from what it would be, were those older concepts not present. *The transformation of a newer* (weaker) *concept by means of an older one surpassing the former in power and inner organization bears the name of apperception, in contrast to the unaltered reception of the same perception.*

The older concept is called the *apperceiving*, the newer the *apperceived*,—and the whole process consists in this, that the latter is compared with the former and must adjust itself to the older as the stronger.[1)]

If the new idea has elements which coincide with the apperceiving concept, they appear with added intensity; if it has points not consonant with the stronger concept, they are suppressed, in that they are almost exclusively subject to arrest. True, the newly entering concept (the apperceived) appears at first to have the advantage, in that, on account of its novelty, it claims the attention with full power, especially if a sense-perception, whereas the older concept mass needs time in which to assert itself; but soon this relation is reversed, since the older concepts, on account of their many-sided connections in the web of series, are able to attract more and more assisting concepts, which free the apperceiving concepts from arrest. The process closes finally, in that the apperceiving concept takes the apperceived up into itself, after it has *assimilated* the latter; *i. e.*, absorbed what is like and repelled what is foreign and opposed.

The condition of apperception is the presence of powerful masses of concepts which, standing in the middle point of a wide-branching web of series (§ 33, Remark 2), and supported by numerous helping concepts, can easily repel every arrest caused by newly entering concepts. Only grad-

1) Compare my work on "The Essential Form of Right Methods" (§ 10 and 31), for an explanation of apperception from the standpoint of the judgment and the syllogism.—*Translator.*

ually do concepts elevate themselves to such commanding position, in that they frequently pass through consciousness and associate themselves with numerous concept groups and series. We have here a growth of concepts with increasing age and through repeated acts of apperception. Every act of apperception strengthens the apperceiving concept, because it absorbs in itself the new concepts. Herein is explained the unyielding opposition which elderly people who have lived and worked in a narrow sphere make to every attempt to change their opinions.

Yet it sometimes happens that older apperception masses are shaken, altered, and even completely transformed by newly entering concepts, so that the course of apperception is reversed. "The indisputable evidence of a new perception necessitates the already firmly fixed theory to undergo modifications; new experiences unsettle old convictions, and in general break up old and cherished notions" (Volkmann). Such a transformation does not occur without violent emotional excitement, if it comes on suddenly, as when we, for example, discover our friend in open faithlessness. It may, however, through the progress of our experience, come to pass gradually and assume the character of a refining or clearing up of our principles, views, and convictions. Thus, apperceiving concept masses alter not only with regard to strength, but also with regard to content. Apperception may even increase, or become more powerful, in that the apperceiving concepts are themselves apperceived by masses and concepts of a higher order. By means of such an arrangement of concepts, the organic unity of our consciousness is produced.

Remark 1.—When apperception does not take place there is a thoughtless surrender to the changing impressions of the outer world, which manifests itself as childish naïveté, or as dependence of judgment and bearing. Mere perception yields itself up to the outer

impressions, apperception seeks to subordinate them; there man is a slave, here he is master of his surroundings and his fate in the sense of the Stoic maxim, *Sibi res, non se rebus subjicere.*

Remark 2.—Every apperceiving concept rules in its own realm of concepts; it has its own field of apperception, for example, the realm of numbers with the mathematician, of tones with the musician, etc. The apperception masses may be themselves more or less definite; if they are too indefinite they produce that easy, superficial apprehension so often found in common-place men, which does not trouble itself with nicer distinctions. With a sharper defining of the apperceiving concept masses, the apprehension is more difficult, but also more fundamental, as we notice with philosophical minds, which are not so quickly ready with a judgment. The shallow physician apperceives a given case of sickness upon the spot; the indifferent judge does the same for a lawsuit intrusted to him for decision; whereas his more reasonable colleague reflects before he decides.

§ 46. SIGNIFICANCE OF APPERCEPTION. ATTENTION.

Apperception is the form in which the mental culture of the individual and of society is completed. It is *a kind of process of condensation* of thought and brings into the mental life a certain stability and firmness, in that it subordinates new to older impressions, puts everything into its right place and in its right relation to the whole, and in this way works at that organic formation of our consciousness which we call "culture." By means of apperception, the individual fact is held fast and remembered, whereas it would otherwise fleetly pass us by. *The apperceiving concepts are the best supports of memory.*

Apperception is exceedingly important for attention (§ 27). To give attention to an object, means to hold the concept of it in consciousness against the threatened arrest. This may be done in two ways, either through the continuance of the sense excitation, or through the reinforcement of helping concepts; the former is the basis of *sense*, the latter

of *spiritual* attention. Further, since in the latter case the assistance may flow in of itself, or may be brought about by design, attention appears either as *involuntary* or *voluntary*.

With regard to *spiritual* attention, it may be remarked that there could be no more powerful reinforcement of a concept on the part of helping concepts than that which is afforded by apperceiving concept masses. Even the most insignificant phenomenon is firmly held as soon as it meets a freely-mounting apperception mass. Our spiritual attention is involuntarily turned towards those concepts which meet with apperceiving concepts in our consciousness. Since the formation of apperception masses varies with different individuals, since this depends upon their biographical development, it becomes plain why the attention and its higher and more constant expression—*interest*—apply themselves to different phenomena with different men. The jeweler discovers the flaw in the diamond, but pays little attention to the finer differences in the blossoming of plants, for which the botanist is so sharp-sighted; not the slightest symptom of sickness escapes the physician, but he does not remark deficiencies in bedding and linen, which his wife would have perceived first of all.

Nothing is so characteristic of the culture of the individual or of a people as the objects with which their attention most loves to busy itself. The more universal the culture, the wider is the compass of these objects. With the little child, whose mind is not formed, spiritual attention can not be depended upon; his mental activity follows only the direction of the strongest sense impressions and the charm of novelty. For this reason it is the hardest task of early instruction to hold the attention of the child; association with what is already known, appropriate introductions, and the assistance of sense impressions are the best means to this end.

Finally, it is the apperception which brings about the phenomena of intelligence, to which we shall turn our attention in the next chapter.

Remark.—Apperception is the reaction of the old against the new—in it is revealed the preponderance which the older, firmer, and more self-contained concept groups have in contrast to the concepts which have just entered consciousness. This superiority in strength may go so far as to falsify the outer perceptions, in that even sense impressions are apperceived by strong concept structures. The timid see ghosts everywhere; to the unhappy everything appears black; to the optimist everything is seen in a rosy light.[1])

Apperceiving concepts cause us to see things even where there are none; as, for example, the schoolmaster his absent pupil. Apperception enables us to see things, not as they are in themselves, but through the medium of our former experience, as through a colored glass. Our view of the established order of things is subjectively colored. No angel grasps the pure truth—much less a man. Every thing known for which we have the helps of apperception, seems natural to us because it awakens responses in us, and because we can easily find our bearings in it; the strange and foreign leaves us cold and awakens at most only our surprise—we know not what we have to do with it; hence the impulse to give significance to everything. to explain it, to relate it to the known; hence, when the name of a man, a city, an event is mentioned, the satisfaction of being able to say, "I know the man, I have been to the city, the circumstances of the event were so and so." Even in science, all explanation seeks to lead the new back to that already known, and thereby to bring it into harmony with the whole.

§ 47. FATE OF CONCEPTS. REVIEW AND RESULTS.

The elements of soul life are sense-perceptions. From them, in accordance with the laws of simultaneity and suc-

1) "The botanist sees much in a plant, the horsedealer in a horse; the musican hears much in a piece of orchestral music, of whose presence in the sense perception the layman has no idea. From the same story each hearer interprets something different; out of the same laws each party interprets its right; the same turn of battle is proclaimed by both armies as a victory. Out of the same book of nature the different readers, men and people, have gathered the most diverse things" (Volkmann).

cession, are formed composite concepts and series of concepts. In so far as we project our sensations upon an outer world, they are called outer, or *sense-perceptions.*

Concepts in general are originally mere qualities. If they meet simultaneously in consciousness, there follows in consequence of the unity of consciousness a reciprocal action, in which their like and opposing characteristics make themselves felt. In that the similar further and the opposed arrest, individual concepts become powers, and assume in the reciprocal struggle various degrees of clearness. The degree of clearness of a concept will be so much the higher, the more it is furthered—so much the less, the more it is arrested or opposed. Hereby, concepts acquire the notion of quantity, and can be graphically represented as ordinates, which stand perpendicular to the threshold of consciousness. (Statics and Dynamics of Concepts in Herbart. See Fig. 1.)

For concepts there is the law of continuous existence, whereby they perpetually endure when once they have existed. If they are obscured by newly entering concepts, they continue to exist in a fettered state and may, under favorable conditions, be again unfettered; that is, reproduced. Through the possibility of reproduction, which is always open to them, they assume an essential function in the events of consciousness, and in their totality form the potential consciousness of man.

In actual consciousness, sense assumes the most important rôle. Concepts arising through sense-perception have a lasting source of power in the sense excitations, and resist successfully the arresting influences which fall upon them, and may, without special effort, be long held in consciousness.

Reproduced concepts whose physical objects are not immediately before our senses, do not possess this lasting source of power. It is, therefore, difficult to hold them for long periods of time up to a given degree of concept clear-

ness. What the nerve excitation is for the sense-perception, the support of helping concepts at its service in consciousness is to the reproduced concept. Individual concepts for which a large number of helping concepts are at hand, can be supported at a considerable height of clearness (favorite notions, solicitudes, interests). Only under certain, mostly abnormal, conditions does the reproduced concept arise to the intensity of the sensation (visions, hallucinations).

According as the reproduction bears the character of the old, that which has already been present, or that of the new, it is divided into the action of memory or of imagination. Both mediate the transition to intelligence. Memory furnishes the content, imagination gives the form, the understanding gives the rules.

In our concepts, although they are merely subjective states, we perceive very soon indications of an external world. This outer world presents itself to us in the forms of space and time. The space and time arrangement in which things external to us are found, is reconstructed by the soul by means of apprehension in the series form. Space is the perfect scheme of an all-sided series apprehension. Concepts of time and space become so familiar to us that we project all things in space, and all events in time, so that it is the most difficult task for our faculty of apprehension to think anything as time-less and space-less.

CHAPTER III.

THE INTELLECT.

§ 48. THINKING IN GENERAL.

The formation of the higher concept structures, which impress upon our soul life its peculiar type, depends upon the manner in which the association of concepts occurs. There are two great principles in accordance with which the association is formed; first, *the principle of the content of what is presented to the mind* (likeness, similarity, difference, opposition); and second, *the principle of simultaneity, and the series conditioned by it.*

The association of concepts according to simultaneity and the series, is *accidental, external, mechanical;* because the reason for the union is here the purely accidental fact of the meeting of concepts in our consciousness, and on no account because of any inner relation of content. Even the contradictory may here be joined together, even the disparate united. Combinations of concepts arise to which nothing outside of consciousness corresponds.

When without effort or special purpose we give our thoughts free play, they often take this mechanical course, which is characterized by involuntary leaps and quaint combinations. This finds its most perfect manifestation in waking and healthy states, but we never find entirely pure types of the mechanical association of concepts in dreams, in mental derangement, or insanity.

Very different is that association which is in accord with the content of the concepts, and which for this reason appears as a necessary, inner, and logical one. The ground of uniting does not here lie in the subjective encounter of concepts, but in their logical and content relations, which remain the same under all conditions, and are alike at all times and for all minds. The most perfect expression of this logical association of concepts is found in the state of reflection, in logical contest, in scientific treatise, and in mathematical demonstration.

The mental adjustment according to the content of what is present to consciousness is called thinking; and the faculty of thought is the understanding.

But one adjusts himself according to the content of that which is present to consciousness when one unites that which should be united and separates that which should be separated. Since the elements of concepts, the sense-perceptions, are given to us in a manner independent of our assistance, thought can only manifest itself in the synthesis which it brings about between these elements. In truth judgment as the act of uniting and separating forms the peculiar function of thought. Perceiving without the judgment's synthesis and separation of elements would be purely mechanical activity of mind, but not thinking.

Logic distinguishes three functions of thought; the formation of conceptions (general notions), judgments, and of syllogisms, and traces all these functions back to the conceptions, or general notions, and their relations. Psychologically the act of judging precedes the formation of general notions and the use of the syllogism, for notions are only the result of judgments about things,—syllogisms are only mediated judgments.

Remark.—Thought will often have to disturb the connections of concepts as they are preserved in memory, in order to give them their

proper thought form. In this elaboration, which destroys the old in order to construct the new, the imagination assists, yet not as a determining force, but rather as an assistant. When the imagination runs away with the understanding, the quiet movement of thought comes to an end; it is also excluded where the imagination is too weak to disturb the accidental originally formed connections of concept life. The former is noted in poetic extravagance with its exaggerations and idealizations; the latter appears in the sad spectacle of idiocy and feeble-mindedness, in which there is incapacity to adjust the accidental associations of consciousness by means of any opposing concepts. One can not argue with an idiot on logical grounds. He regards the lowest as highest and the highest as lowest, and in general plays with the objects of intelligence according to the humor of his will. Truth is, however, supreme above all arbitrariness; it mocks at all the efforts of even the strongest will; it may be denied, distorted, discarded—it ever asserts its validity through its own might.

§ 49. THE JUDGMENT.

As the logical judgment arises from a question and an answer, so there are two distinguishable stages in the psychological act of judging; viz., the stage of REFLECTION and that of DECISION.

First, there must be two concepts, A and B. One of these, A, from which the thought proceeds, is the *subject;* the other, B, to which it extends, is the *predicate.* The subject is therefore the given, or presupposed; the predicate, the added, or united.

Were there nothing but the two concepts, A and B, present, these would simply fuse, and we should have the combined concept, AB, but in no sense the judgment, "A is B."

If I perceive a person and recognize him at once as my friend B, there arises such a simple fusion, without ever coming to a *judgment.*

If, on the other hand, a subject concept, A, presents several opposing concepts, B, C, D, E, ... the comple-

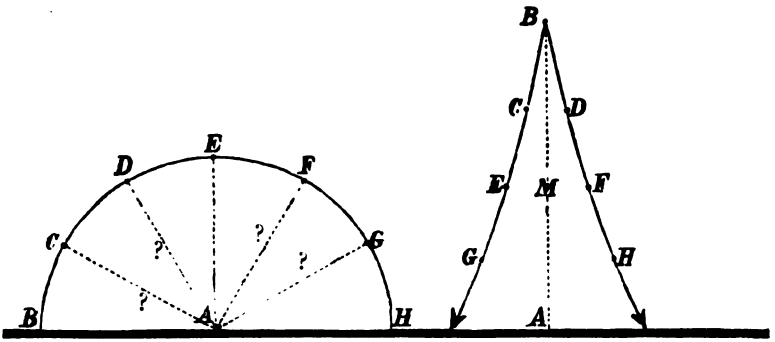
tion of a union with A is postponed, in that each of them asserts a claim to be united with A, but is hindered in this attempted union by the like striving of the others. There arises a vacillation, whereby it is undecided whether A is B or C or D. This is the stage of reflection or of doubt, because we have to consider two cases; A is B or A is not B. Each of these judgments is problematic.

Reflection immediately arises when I see a person known to me, whom I do not at once recognize. I am inclined to regard this person A as my acquaintance B, but it occurs to me at once that it may be my friend C or D. Or, I see a bird; the sight of it recalls to me the general concepts, *nightingale*, *lark*, *linnet*, etc.; thus arises a reflection as to which of these birds it is, since it may turn out to be one or the other.

This stage of reflection will continue so long as the opposing predicate concepts, even though in rapid change, are present to consciousness with the same degree of clearness. It will be terminated in favor of a certain predicate concept, B, as soon as any other concept, m, appears and offers such decided help to B, that it rises with positiveness into consciousness, causing its opposing concepts, C, D, E, ... to sink. Now, nothing will stand in the way of the union of B with A, and this union will, under these peculiar circumstances, appear as the judgment "A is B." This is the second stage of judging, that of decision.

The relation of the many predicate concepts in the stage of reflection, may as with Herbart be compared to the rounded *arch;* that in the stage of decision, to the pointed arch. They may be graphically represented in the following scheme:

(Fig. 8.)



A is either B or C or D . . . . A is B through M. A is not C, D . . . .

The concept M, which brings about the decision, is the psychological ground of the judgment. This bird is a nightingale, because it has this peculiar note; this man is my acquaintance, B, because he has this peculiar walk.

The act of judging falls under the notion of *Apperception*. The subject concept, which is not yet precisely fixed, is, as newly entering concept, apperceived by the older and stronger predicate concept.

Remark 1.—Each judgment is made but once, for the doubt which was thereby overcome remains decided for all future time, provided the reflection was a fundamental one. Thus the youth judges where the man has already formed his judgment. Every true judgment expresses at the same time an extension of our knowledge because it gives rise to combinations which were not there before, and which answer to the content of what is thought. All progress of thought is connected with the formation of judgments. The *analytical* judgment merely clears up our knowledge, whereas the *synthetical* extends it.

Remark 2.—The formation of the judgment is distinguished from the mere association of concepts, in that it does not occur without resistance. This resistance arises from the opposing predicate concepts which are involved in the reflection. Therefore judgments are not announced when this resistance is absent; when, for example, the

events arise as they were expected. But where the subject concept brings with it the opposite of what was expected, we feel called upon to judge, because the expectation comes between the subject and its accompanying concept. "The sick man is dead" we say, because we had expected life.

Remark 3.—*Can animals also form judgments?*—The dog knows his master; he understands the signs which are made to him; arrived at a ditch, he decides whether he can leap over it or not. Even if here and there in the animal world we find a certain analogy with judging, yet there are wanting this peculiar calculating reflection and the conscious choice from among several offered predicates. That the judgments of animals rest upon associations of concepts arising from habit and training is clear when an animal is brought into an unaccustomed position, and where, left in the lurch by its own experiences, it must judge from its own reflection. Yet not only the animal, but also the child, and the adult accustomed only to a mechanical life, lose their heads when placed in entirely new positions and relations, when they are thrown entirely upon their own understanding for the formation of an independent judgment.

§ 50. THE SYLLOGISM.

In logic the syllogism appears as a mediated judgment. The logical relation of two notions, A and B, is *mediately* determined through their relation to a middle notion, M.

Psychologically, every judgment is mediated. Every judgment independently made is preceded by a reflection, and is brought to a conclusion by the appearance of M, its psychological ground (§ 49).

But in the majority of cases, this decision is made so rapidly that we are not distinctly conscious of the grounds which have been active in the process.

The frequent correct judgment of men of slight mental culture, and especially of children and women, is to be accounted for as in consequence of certain obscure concepts which are influential in the decision without coming clearly

to consciousness. When we ask these persons why they have thus decided, they are incapable of giving us satisfactory reasons.[1)]

Judgment following from such obscure psychological grounds furnishes but small guaranty for correctness. Where we have to do with the highest degree of certainty, as, for example, in scientific demonstrations, in logical contests, etc., one must be clearly conscious of the grounds upon which one judges. This will be the case when the relation of the middle notion, M, to the two chief notions, A and B, is determined by judgments, which are then called *premises*.

So far as the syllogism is concerned, logic is concerned with showing the various ways in which the conclusion "A is B," may, through the mediation of the middle notion, M, be derived from the two premises. It shows that the whole of these forms of the syllogism may be reduced to a single fundamental form called the first categorical figure:

M is B	Major Premise
A is M	Minor Premise
hence A is B	Conclusion.

The Major Premise corresponds to a general rule, the Minor Premise posits a special case, which in the conclusion is subsumed under the general rule.

But the transition from the universal to the particular corresponds but slightly to the psychological course of experience, because experience begins with the given, and the given is the concrete and individual. It therefore seems appropriate to reverse the order of the premises of this ground

1) In this connection the intellectual instinct of women is remarkable. They are usually able to hit the truth, yet without being able to formulate their thought in an entirely logical way. And "what is not perceived by the understanding of the adult, is often seen directly by the childish mind."

form of the syllogism, as Drobisch has already done, for psychological use; thus,

A is M	Minor Premise
M is B	Major Premise
A is B	Conclusion.

that is, M is a characteristic of A, B is a characteristic of M, therefore B is a characteristic of A.

This appears more clearly when the transition is made through *several* middle notions or terms. Only the Aristotelian, not the Goclenian sorites corresponds to psychological thought. (See *sorites* in Webster's Dictionary.)

Remark.—Reasoning through the syllogism depends essentially upon subordinating the particular to the general. But since in experiencing only the particular or in reality only the single is given, the universal judgments which form the major premises of our syllogisms, must be derived from the particular and individual. This arises mostly through induction. It is concluded that that which holds in one case or in many cases of the same kind, must hold in all cases of this kind. Logically considered, the inductive conclusion is only one of probability; psychologically regarded, it has often the highest degree of subjective certainty. That to-morrow the sun will rise, because it has thus far risen every day, is for every man a truth which appears little less certain than that twice two are four. And yet this truth rests only upon a conclusion of probability. The inductive reasoning of the common mind is characterized by its inconsiderateness, in that men, following their impulse towards generalization, are often inclined hastily to draw unwarranted conclusions from a few isolated cases. (Compare the Author's Logic, § 86.) The most of our major premises, which form the basis of our inductive reasoning, have themselves arisen from induction, and have, therefore, only a borrowed universality. The premise, "All men are mortal," and similar premises have only inductive universality.

§ 51. TRUTH OF THE JUDGMENT.

A judgment is true when it gives rise to such a connection between our concepts as corresponds to their content. The judgment "Man is mortal," is true; the judgment "Chalk is an element," is false, because the asserted connection between subject and predicate in the first judgment corresponds to the content of what is thought, but in the second runs counter to this content.

Whether the judgment is true or false will depend upon the manner in which the reflection and decision are made. Very many judgments are false because they are made without any reflection, in that the first predicate that offers itself is united to the subject. Such a judgment, made without any reflection, is called a "prejudice." With other judgments the reflection is indeed present, but not compassing all possible predicates it becomes one-sided. Finally, though all predicates are considered, the necessary "impartiality of judgment" is wanting, in that one is already prepossessed in favor of a certain decision. In this condition there is in consciousness a concept or a mass of concepts, M, which secretly reinforces some one of the many presented predicates, and which has its ground, not in the content of what is thought, but in the subjective constitution of the emotional side of the mind,— in desires, inclinations, passions, or prejudices. On this account it happens that, in thinking, one often brings forth results which he desired to produce; that is, he has judged from subjective grounds.

Subjective grounds of this sort are concepts which, without bearing on inner relation to subject and predicate, attach themselves to them rather by accidental association; for instance, newly entering sense-perceptions, sudden fancies, or reproductions in consequence of mere habit. They may decide the result of the reflection, without giving the judgment any claim to real validity.

In addition, expectations, wishes, and fears often influence the result of the decision, and therefore have the tendency to falsify the judgment. The prejudices of the mind mix themselves up with the business of the understanding, and it is this interference which makes it so hard to arrive at truth regarding certain things; as, for example, one's self.

In the course of the psychological life of the individual, as of societies and of ages, certain apperceiving concepts are formed, which cannot remain without influence upon the judgment. They furnish the *major premises of judgments* according to which our opinions of every day matters are determined. The judgment of the benevolent man is one thing, that of the avaricious man another; while the judgments of different parties and sects in public life concerning the same things must differ, because the major premises of judgments differ.

Remark.—The most dangerous enemy to truth is self-interest. A judge must not decide in his own case, and the witness is the more trustworthy the less personal interest he has in the result of the dispute. Love is so blind because self-interest robs it of all reflection, and the highest degree of love, that of self-love, makes a correct judgment regarding itself almost impossible. Were all truths as indifferent and cold as those of mathematics, the search for truth would be much easier. In very many cases, man sells his judgment to satisfy the claims of comfort and selfishness.

§ 52. THE FORMATION OF NOTIONS.

Any concept is a psychological notion in so far as it answers to the content of what is perceived; i. e., to the object to which it relates. It should, therefore, have no more and no less partial concepts than the object has characteristics.

Since a concept never appears in consciousness alone (§ 27), it must be freed from all simultaneous concepts which

do not belong to the matter in hand and which, therefore, do not concern the concept itself. This is accomplished when it becomes the middle point of our attention, consciousness being focused upon it. (See Fig. 2, in § 27.) In this way it reaches the highest degree of clearness of which it is capable.

But a concept must not only be made CLEAR; it must also be made DISTINCT. That is clear which, as a whole, is distinguished from everything else; that is distinct in which the component elements are distinguished. Only the compound can be made distinct.

We make concepts distinct through judgments, by means of which characteristics lying in the content of that which is perceived are brought to light. I distinguish a square when I say, it is quadrangular, it is equilateral, it is right-angled.

A notion is, therefore, a concept, clear and distinct as possible, which answers to the content of that which is perceived.

The concept, as a general term for any mental product, is distinguished from the notion; for, *a*) there are an infinite number of concepts of a thing, but only one notion; different men may at different times represent it, yet there is but one way in which it can be truly done; *b*) the concept as a mental state is something actual; the notion, on the other hand, is only a particular FORM OF REPRESENTING, and has the same reality that number has; *c*) the concept is dependent upon being conceived, it is nothing outside of the perceiving subject, and as a mental state has a certain intensity, a beginning, a duration, and an end; the notion, on the contrary, is timeless, and not dependent upon being in consciousness. There would, for instance, be a notion of God, if no one were in condition to form one; *d*) the notion is the pattern for the concept, the scheme in accordance with which it must adjust itself, if it is to answer to the content of the actual. Notions are logical ideals. While concepts are something in motion, are changeable, accidental, and subjective, notions are dis-

tinguished by their rest, unchangeableness, necessity, and validity. (For this reason they were held to be true existences by the philosopher, Plato.)

Remark.—The judgment is the mother of the notion; every judgment as soon as made is transformed into a notion, which is made distinct by a predicate determination, that is, by a characteristic. The judgment, "the soul is immortal," is transformed into the notion *immortal soul.* As the notion becomes *distinct* through the affirmative judgment, so it is made *clear* through the negative judgment, being thus distinguished from other similar notions. Precision of thought is shown in the sharp distinguishing of notions.

§ 53. KINDS OF NOTIONS.

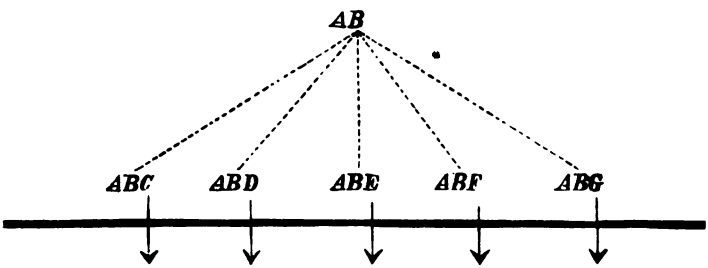
Notions are either *individual* or *general.* The object of an individual notion is the individual thing; that of the general notion is the multiplicity of single things which, agreeing in any particular, properly belong together, and hence form a CLASS, even though widely separated in space and time.

Individual as well as general notions arise from *sense-perception through abstraction.* If a single thing is perceived repeatedly, hence under different circumstances, the concept A is found each time to be united with another group of concepts, m, n, o....., whereby the total concepts, Am, An, Ao..... arise. If, now, the object A is perceived, all of these concept masses are reproduced according to the law of similarity, when the opposing concepts, m, n, o,..... are obscured, and A is intensified and freed from all simultaneous concepts, that is, becomes a notion. During this process there is a concentration of attention upon the object A. In this way the child, through repeated observation and attention, reaches the notions of the individual things which surround it; for illustration, "this rose"—but not rose in

general.[1] The attention must be withdrawn from the vase in which the rose is, and the table upon which the vase stands.

General notions also arise from sense-perceptions through abstraction. If one has gained a number of similar perceptions, for example, of different houses, and later sees a given house, the previously gained perceptions of houses are reproduced according to the law similarity, and of themselves arranged in series. All the members of this series have a common chief element, AB, which comprises that which belongs to *all* these perceptions, *e. g.*, the houses, and are distinguished only by certain minor determinations, C, D, E, F, G, which belong to them individually. It is natural that the concept of this chief element, since it occurs in all members of the series, should attain to a special strength, or intensity, while the minor elements should sink beneath the threshold of consciousness.

(FIG. 9.)



Thus there arises at first a *common image*, which is, however, clouded by those manifold minor concept elements which linger about it. Only when the abstraction is com-

1) The formation of this notion is greatly facilitated if the object is a movable one. Since as a movable object it is observed with various surroundings, it can the more easily be released from the background which is at the same time perceived with it. On this account the child apprehends the living thing easier than the lifeless one—the cat easier than the table.

pletely freed from everything non-essential and subordinate, by means of negative judgments, does it become a *general notion.* But this abstraction is never wholly completed, because the opposing minor determinations, C, D, E, F, G, ... do not have *like intensity.* Let us assume that in the group of perceptions from which A B is to be abstracted, the members A B C and A B F predominate; they will not suffer total obscuration, but will hover round the common image, AB. The content of the common image, "house," which arises from perceptions of huts, palaces, churches, barracks, etc., will bear the marks of this field of observation, and will depend upon what perceptions predominate.[1]

The perceptions ABC, ABD, ABE.... *e. g.*, stone house, frame house, one-story house, two-story house, cottage, palace...., logically considered, form the extent or compass of the general notion AB (house). From this arises the important principle: *General notions are thought psychologically, not through their content* (sum total of characteristics, definition), *but through their extent* (survey of kinds, number, or quantity of that to which the notion applies). The notion "color" can be thought no other way than through red, orange, green, blue, violet.

Remark 1.—The general notion makes demands upon our conceiving power which become the more difficult of fulfillment the higher the notion is, because the number of particular determinations to be repressed increases with the universality of the notion. In addition, the extent of these notions gradually becomes too great for us even superficially to apprehend with our conceiving power. How great, for example, is the extent of the notion "animal"! How is it possible, even superficially, to think the enormous extent, which

1) The dweller in the capital, who sees mostly palaces about him, will make quite another image of the notion "house," than that made by the inhabitant of the peasant village, whose eyes rest mostly upon wretched huts, even though each makes an earnest endeavor to free his mind of all non-essential elements in forming his notion of the house.

embraces all mammals, fishes, birds, butterflies, bugs, and insects, the elephant and the plant-louse. And yet, whoever asserts anything of animals asserts it alike of all these creatures. Hence the thought activity of the weak thinker grows lame when thought reaches the sphere of high abstractions, and the necessity arises of attaching the universal to the particular, the rule to the example. (*Longum est iter per praecepta, breve et efficax per exempla.*) Thus the geometrician proves a theorem from a particular triangle drawn upon the board, which holds for every triangle, irrespective of how its sides and angles are constituted. Instead of the universal, we have here "one among the many" (Quilibet); instead of running through the whole series of notions which compose the extent of the general notion, a pause is made at one member of the series, no matter which. It is particularly the notions in natural history which are thought through typical individual images.

Remark 2.—The psychological notion in contrast to the logical, has always about it something evanescent, indefinite, transitory; and since we think only in psychological notions we have here an explanation of the variability in the judgments and opinions of different men and times. Every man and every age has peculiar notions of the same things, and these notions are in a constant process of development, in that they change as the consciousness changes. The notions of the youth and the man are different, as are those of the child from either. The astronomer has a notion of the sun different from that of the former, just as the notion of virtue and of native land with Socrates differed from that of his accusers.

§ 54. SPEECH AND THOUGHT.

The condition for the formation of notions is the freeing of a concept from foreign elements of consciousness (§ 52). This is brought about by giving a sign to the notion; that is, by connecting the notion with sense symbols.

Individual notions have their peculiar sense symbols in the external things which answer to them; they exist not only subjectively in our minds, but also actually in the external world. The visible thing is likewise the symbol of its own individual notion. This notion returns to us as often as

we view the thing. Even here we perceive a language in which nature itself speaks to us.

It is otherwise with general notions. Here the natural symbol is lacking, and must be devised through the process of culture.

The object of the general notion is not a single thing, but a class of single things which belong together by virtue of a certain inner relation (similarity); as, for example, all trees, all men, all houses—but which, however, never occur together in the actual world, and are consequently not subject to comprehension in any single act of observation. Their synthesis must be effected by the understanding, which relates the one to the other, and thereby arrives at the "extent" of the general notion, from which the latter arises through abstraction. (Compare § 53.)

This relating of like to like for the sake of the formation of classes is greatly facilitated by the giving of names. The like name which every member of the class receives, for example, every fish, reproduces the whole class as soon as a single object is perceived, and therewith the general notion, with which the name is now inseparably fused.

When the understanding of man has given a name to each general notion, *e. g.*, tree, house, man, he has thereby lent an outer existence to this notion; he recognizes every object to which the notion is appropriate as soon as the name of the notion is mentioned. Thus a botanist recognizes a plant by connecting it with its peculiar name.[1]

Just as the noun is a sign of the notion, so the sentence is the expression of the judgment. As soon as the child begins to express judgments it begins to think. Since the

1) Not as if knowledge lay in the name; for the pronunciation of the name furnishes no knowledge to him to whom the name is foreign. The name is merely to express the likeness in kind of the given example with its plant class, and to remind us of all individuals which bear the same name.

formation of general notions rests essentially upon judging, which makes content and extent clear by enumerating the elements of the notion, it follows that language renders the most important service in making the notions clear and distinct.

By means of language, knowledge and culture receive immense aids. Through tradition and writing the culture of the mature is transplanted to the minds of the young, and every generation connects its culture to the past, instead of beginning anew, for it assimilates the treasures of knowledge and experience of past generations. This treasure is mostly recorded in the literature of a people; that is, in the sum of the written monuments of its culture. Even in the 19th century, we partake of the culture of Greece and Rome.

Remark 1.—The outer representative of the general notion is therefore, not the single thing which we perceive, but the name which we connect with it, and which calls up to consciousness the whole class. This is apparent as soon as one reflects that the same individual thing, *e. g.*, a lion, belongs to the most widely differing classes, and hence may indicate the most various notions. For instance, the lion belongs to the classes: "beast of prey," "strong" "quadruped," etc. In this way ABSTRACT NOTIONS are formed, in that through the assigning of names, things are synthesized into a class which agree, not in the essential elements of the notion, but in other characteristics. If, for illustration, the lion is classed with the bear, with the waterfall, with the storm, with Hercules, with alcohol, etc., by ascribing the name "strong," to these objects, we come to the universal and abstract notion "strong."

Remark 2.—Language in the narrower sense is the peculiar superiority of man, and the greatest vehicle of his culture. True, animals can communicate with one another, and possess to this extent a kind of language in the wider sense; but their signs are rather a natural expression of their momentary subjective states, comparable to the sign language of deaf mutes, but in no sense self-created symbols of general notions. Therefore, with them, however much they may show traces of a psychical activity, culture is not to be thought of; their psychical state is condemned to an eternal stand-still, whereas the race of man is capable of a constant development.

§ 55. THE RISE AND DEVELOPMENT OF LANGUAGE.

The present oral language as a system of conventional (fixed by common consent) signs for the symbolizing of concepts, presupposes a NATURAL LANGUAGE, by means of which men originally must have come to an understanding concerning the significance of conventional word symbols.[1]

This natural language rests at first upon those pathognomonic reflex movements which involuntarily accompany our mental states. Man in a state of nature receives impressions from without and reacts against them through movements. These movements spread themselves over his whole body and to all his limbs. (*Quot membra, tot linguae.*) Vocal reflections are only a peculiar kind of the same thing, and often develop into oral speech.

The various pathognomonic reflex movements become involuntary manifestations of the states of the soul, in that through them man gives expression to his inner state, even if he does not comprehend the purpose of the communication. When another attends to these expressions in order to judge of the inner state, they become symbols. Thus, the cry of pain becomes a sign for pain; the gesture of anger, the cry of astonishment, etc., become means of communication for these states of the soul. Tones here stand upon a plane with facial expressions and gestures—natural oral language is a *gesture language of the organs of speech.*

In this way natural man at first expresses pathognomonically his feelings and excitations.[2] To this class belong inter-

1) "If language, according to its notion, is the designed communication of thoughts through arbitrary signs, it is impossible that the first communications should have been through language, for, arbitrary signs must be agreed upon, otherwise they would not be understood, or at most they could only be inferred; but the speaker cannot reckon upon inference merely" (Herbart Psych. § 130).

2) At this stage the word is a kind of instinctive motion, which makes its appearance with a natural necessity, upon an emotional excitation through external impressions.

jections, which, as signs of reminder, have adhered to the original state of language; as, for example, ha!—ah!—O!—alas! poh! And also the self-explanatory facial expressions and gestures, which, like laughing and crying, nodding and shaking the head (yes and no), shrugging the shoulders, repelling with the hand, beckoning, pointing, etc., have a significance apparent to all.

But the reflex movements take on also the character of an imitation of what is seen and heard. At first only a phenomenon will be imitated in this way, but afterwards also the object itself from which the phenomenon arises. The exclamation "plump!" imitates by reflection the phenomenon of the heavy fall of an object; the onomatopoetic expressions: "Bow-wow"—"meaw"—"baa"—and the like, are designed to represent symbolically not only the mere phenomena, but also the objects themselves, the dog, the cat, the sheep. In the pathognomonic state we have to do with sound gestures; in the onomatopoetic, with sound symbols.

Pathognomonic vocal gestures, and onomatopoetic vocal symbols probably effected, to a certain degree, the first communication between men in a primeval state, and doubtless furnished the means for a further perfection of oral language.

As soon as associations were formed between certain concepts on the one side, and certain sounds on the other, whereby these sounds became symbols for the concepts, man gradually advanced to freer and freer associations between concept and sound symbol; *i. e.*, to such associations between sound and concept as have no inner connection, and which arise, therefore, only by a gradual conventional connection of the two associated members. Thus, for the concepts of the house-dog, instead of the onomatopoetic expression, "Bow-wow," there arose in the various countries the various conventional symbols; for instance, "dog" (English),

"Hund" (German), "canis" (Latin), "le chien" (French), "pes" (Bohemian), etc.

The free associations which lie at the basis of present oral language did not by any means arise arbitrarily, as, through the dictum of any great personality, but they arose rather by NATURAL SELECTION,—in the way indicated by Darwin for the development of natural organisms. Just as the Arabians still possess six thousand words for the camel, two thousand for the horse, fifty for the lion, and two hundred for the snake, so in the formation of language there arose at the various points in the linguistic territory the most manifold linguistic symbols for every concept, which entered upon a "struggle for existence" (competition) with one another, until finally, for whatever reason, the present current name prevailed over the rival expressions, and arrived at general acceptance.

Remark.—The outer speech form serves as an external sign for a certain concept content. This content itself, that is, that state of consciousness which comes to expression through the vocal sign, and which he who would understand the sign must call forth in himself, is called the inner speech form. In the life of the nations, the one as well as the other suffers manifold alterations, which are intimately connected with the changes in culture and with national fate. The same outer speech forms are filled with a varying content in the course of history. The word "virtue" and the word "sun" have now a meaning different from that ascribed to them in the middle ages; when the phenomenon of electricity was first observed in rubbing two pieces of amber together, the word "electricity" had another meaning than that of to-day—the inner speech form has changed. But also the outer speech forms which should serve to express the same thoughts have greatly changed in the course of time. If we compare the German of the Niebelungen Tales with the German of to-day, we are astonished at the changes which this language has undergone in its outer forms during the last six hundred years.

§ 56. THE DEVELOPMENT OF THE HUMAN UNDERSTANDING.

The understanding is not an actual inborn faculty of the soul; it develops gradually rather, under certain conditions, and this development extends from earliest infancy to old age. Memory weakens with advancing age (§ 38), and the imagination is dulled; the superiority of manhood and old age rests chiefly upon the constantly developing understanding.

The following are the conditions for the development of the understanding:

1. There must be material present upon which the understanding can exert itself. This is furnished by the senses and memory, which together fix the bounds of experience. The more experienced a man is the more material is offered for the exercise of his power of judgment.

2. If this matter of experience is to be brought into logical connection, there must be an inner movement induced, whereby that which is associated merely by time relations shall be released and replaced by new forms which answer to the content of the concepts. To accomplish this, imagination is above all necessary. The lack of understanding in animals is due to the lack of free mobility of concepts; *i. e.*, to the lack of imagination.

3. Single concepts must be freed from the remainder of the matter of consciousness and raised to a high degree of clearness. To this end, attention is above all necessary. The greatest enemy to reflection is inattention, which allows the mind to skip from object to object. The melancholy temperament, which carries with it the least rush and the greatest strength of concepts, is the most favorable to thought. Necessity teaches us to think, since it fixes our attention persistently upon certain objects.

4. For the higher culture of the understanding training and instruction are also necessary. Should each man seek

the rational relations which obtain between the objects of experience through his own efforts alone, he would remain limited to individual facts, which are presented to him at the sport of accident as grains of truth in the sands of life. Training and instruction assist him here, for they present whole systems of rational relations. Such systems, on which the combined activity of numberless minds and whole generations have labored, are SCIENCES and DOCTRINES. Their communication depends upon language as a means, which for this reason forms the first and most important subject of instruction.

The development of the understanding is, therefore, not only a mere personal affair of the individual, it is the united labor of society and the race. The history of culture is the history of the human understanding, its deviations and its progress. Its end is the all-sided and masterly elaboration of the matter of experience by the understanding.

Remark 1.—*Wit*, *acuteness*, and *profundity* serve as expressions of especial perfection of understanding. The perfection of a thought-product depends upon its distinctness and clearness, the first of which seeks to illuminate the notion internally by making prominent the content, the latter by distinguishing it from other notions. Wit relates to the distinctness of notions, and acuteness to their clearness. Wit leads to surprising combinations through the discovery of new associations, acuteness brings about new analysis of concepts by pointing out their distinguishing characteristics; the former proceeds according to similarities, the latter according to the dissimilarities of notions. Wit is creative, acuteness is critical; that is synthetical, this is analytical. Profundity stands as a higher grade of acuteness, and leads through the finest distinction of characteristics to the most hidden truths; but it may also degenerate into the most idle subtility.

Remark 2.—We have an illustration of how limited the development of the human understanding is where education is lacking, in the condition of raw savages and of those men who have grown up in wildness. The result of such experiences tends to prove that, left to himself, man would rise but little above the animal, and that the

development of his understanding would reach only so far as necessity demanded. In a civilized state, it is not only the school that educates us; it is society, with its rational institutions and forms, with its customs and laws, through which even that man is constantly educated in understanding who has no special trainer or teacher. The self-taught man in society is by no means such in an absolute sense.

Remark 3.—The progress of the understanding in culture is already very great in the present phase of human history. It is conditioned by the increase of the matter of experience, as well as by a more intensive elaboration in consequence of the division of scientific labor; further, through a more active reciprocity of minds on account of increased communication, and by the discovery of new scientific methods, which have opened new roads to the scientific spirit. This progress is most noticeable in the natural sciences since the discovery of the inductive method. Nature becomes constantly more transparent to the understanding, and even her most terrifying elemental phenomena lose their terror, since they are exorcised by the understanding, in the form of natural laws.

§ 57. FANCY.

Fancy proceeds from the union of the understanding and the imagination. (§ 39.)

The imagination sets the concept masses in motion, and threatens to make a chaos out of them; then comes the understanding and subjects this movement process to its rule, in that it sets the logically constructed in place of the accidental associations of time. The concept masses and series enter into new combinations, viz., into such as answer to the content of what is in consciousness.

But the logical demands of thought never go so far that some freedom is not allowed to the imagination. The understanding gives only the GENERAL IDEA—the closer determination is left to the fancy. Thus, no single individual is given by the type of an animal or plant species; there must be added a considerable number of minor determinations, in order to

give a special individual, *e. g.*, "this rose." The addition of these lesser determinations is left to the painter, who represents for us the universal type of the rose as a single example of the same.

The true sphere of fancy is and must be *art*, and especially *free art*, which, in giving individualization to the idea, is animated by no foreign purpose, but makes its task to be merely the representation of the idea in individual form.

In art activity we have two stages to distinguish; first, the invention of the idea, and second, its representation. In order to reach the idea, one must take the way from the individual to the general; from the perception to the notion (for perceptions alone are *given* to us); in order to exhibit the idea individually, the idea must be led back to the perception. In the first the abstracting imagination is especially active; in the second, the constructive imagination.

Nature and life are the rich sources of artistic creation. Even in the freest kinds of art creation, in poetry and romance, the various elements are taken from life, and the more this is so, the more effective they are. But they are not copies, not photographs of life; for, the features there obtained must have experienced that transformation in consciousness which allows the ideal to be recognized in their individual exhibition, and which lends to the work of art the ethereal breath of poetry instead of the severity of reality.

The gift of invention, which manifests itself on the one side as a derivation of the ideal from the particular, and on the other as an individualization of this ideal, rightly stands as the characteristic of genius. The activity of genius manifests itself in this—that it apprehends old notions in new forms, whether in the field of taste or in that of social and political life, and brings these forms to view, not in the form of abstract notions, but in a form appropriate to individual conditions.

Wit, also (§ 56, Remark 1), which brings entirely heterogeneous concepts into relation, and seeks out their similarities, rests upon the activity of fancy.

Remark 1.—Not only does fancy manifest itself in the true art activities—it comes to light in all cases where the design is externally to represent some object, or to execute some purpose, in a manner not slavishly fixed by rule. Fancy manifests itself in the various plays of children, also in games of skill, and in the labors of the art industry.

Remark 2.—Hegel metaphorically defines art as "the shining of the idea through a sense medium," in which definition the immediateness of the artistic creation is well characterized. Two things are here to be distinguished: the subjective thought, and the objective sense medium, through which it is to be revealed, and which may be very manifold. (Color, tones, stones, words.....)

CHAPTER IV.

SELF-CONSCIOUSNESS.

§ 58. THE EGO AS CONCEPT OF THE BODY.

Self-consciousness is the concept of one's own ego.

In the stage of childhood and of man in the state of nature, the body appears as the content of the ego-concept. When the child speaks of itself, it means its own body.

This body is, however, originally known as an external thing,[1] and apprehended through a rich group of concepts which relate to it. Among these concepts belong not only the sense-perceptions, which are made by seeing and touching the parts of the body, but also the numberless body sensations, which are projected upon the body and localized in its parts.

But the body must very soon assume an exalted place among the cognitions of man. At first, through its peculiar sensitiveness, the changes in the condition of the body announce themselves to us directly through the body-sensations, while of external things we have only indirect knowledge,— in so far as they affect our own body. As an *inner* thing, the body is, therefore, set over against *outer* things.

The body is, further, the middle of our constant experience in space. The space series, through which we determine the position of things in space, all proceed outward from it; as soon as the body changes its place, all the dis-

1) Therefore the child speaks of himself in the third person: Karl goes; Karl wants.

tances of external things from us are changed, whereas change of place in any external thing merely changes a single line of distance, the others not being altered in the least.

Our own body is also distinguished from outer things, in that we have immediate control of it, because it is subordinated to the will through the organs of motion (§ 25). The movements of the body follow the inner impulse IMMEDIATELY, whereas changes in external things made by design can be brought about only MEDIATELY; viz., through the movements of the limbs.

Finally, our own body is the starting point for all motions and actions whose peculiar quality and direction are brought to our consciousness through muscular sensations (§ 18).

The concept of our own body as a sensitive inner thing, voluntarily movable, which is at the same time the starting-point of our experience in space, as well as of motions and deeds, forms the content of self-consciousness in its first, primitive stage.

Remark.—To the body, as the first rough substrate of the ego-concept, are added gradually certain external things, partly because they relate closely to the body, as clothing, decoration, steed, equipage....., partly because they mediate the rule of the ego over the external world as powerfully as the limbs; thus, for instance, weapons and instruments. The soldier counts his gun, the rider his horse, the king his scepter and throne, among the attributes of personality; for, the muscles of the horse serve the rider as well as his own; and a good weapon is more powerful than the mightiest fist. — Hence in all ages the increase in the feeling of self with riders and armed men—hence the passion of seeking, through clothing, adornment, emblems of honor, etc., to give the body a greater external importance, and even a greater extension. The use of buskins in the antique tragedy and the high heels of modern times—the love for expansive garments (crinolines and trails with ladies)—the use of high caps and hats as indications of higher worthiness—the significance of the staff as a continuation of the body in any desired direction (scepter, marshal's staff, musician's *baton*) — the many

singular articles of the toilette with men and women—all of these things show the impulse to give the body a greater extension, partly in height, partly in breadth, and thereby to increase the respect for personality.

Going still further, one may count with the body all those external things in the form of property over which man has the right of free disposition. Not only the physical strength, but also "means" (property), as the name indicates, is an attribute of personality; not only the weapon, but also the well-filled pocket-book lends to man a higher feeling of self, and the pauper, however robust he may be, appears meek beside the rich man. In a much more significant degree, however, is the intellectual possession to be regarded as an extension of personality, because a separation from the person is not so easily thinkable as with material goods. The poet regards his poems as the best part of his personality, and the painter calls his paintings "his," even when they have become the property of the dealer or the patron.

§ 59. THE EGO AS MEETING-PLACE OF CONCEPTS.

Bodily sensations are localized within the body—sense-perceptions are projected in outer space. Color and tone are not regarded as concepts of the soul, but as attributes of things; we do not relate them to consciousness, but to objects in space, just as we appear to have the sensation of pain, not in the soul, but in the foot or the hand.

The case is different, however, with reproductions, or concepts in the narrower sense, which we understand very well how to distinguish from direct sensations. Here we know very well that the inciting cause of the concept does not come from without; hence, the need of projecting the concept outwardly disappears.

Yet we are compelled to ascribe some place to the things, which are thus merely pictured to the mind. Where are these things which I hold before my mind when I give free

rein to my thoughts? Certainly not in the external world. These imaged things are in my head.[1]

Since we relate our concepts to one another in accordance with the laws of simultaneity and succession, it follows that we unite them into concept masses and concept series. The series make connections from one group of concepts to another, in all directions, and thus form a concept texture, or web. The crossing points of this concept-texture form central and gathering places for our thought, which plays about here and there between them. The main series which proceed from these crossing points converge toward central places of a higher order, which again unite in a highest middle point, or center. (Compare § 33, Remark 3.) In this way a universal relation of all concepts to one another is established—their centralization into the strictest unity is brought about, just as in a well ordered state the courts and official positions are organized.

This central point of all concepts not expressly projected outward is, however, not *real*, or physically assignable, but is *ideal;* it is precisely the same as that from which directions of projection and lines of distance proceed in all spatial observation. All our concepts press about this point, all concept series proceed from and return to it. *This ideal point, which, in truth, is nothing more than an expression for the fact that all concepts are strictly related to one another, is the pure ego of man.*

Of this ego there is and can be no true definition or idea with a definite content, because an empty place, a mere gathering place for concepts excludes every determination. To the question, "Who art thou?" man can only answer,

1) As is known, we can not distinguish the phantasms of the dream from sensations, and we project them in the same manner in outer space. The dream conjures up an external world for us which does not exist, and which upon waking we recognize to be merely an inner world.

"I am who I am," and to this answer he may add the paradox, "I should be the same, even though I were another."

But since man must think something with definite content if he is indeed to have a self-consciousness, to think his own ego, it is clear that he must fill this indefinite empty middle point with definite concepts,—with such as momentarily lie next to it, and which most fittingly serve as an expression of his ego. These are those concepts which are strongest, most significant, and most reinforced by others. To this class belong the concept of the body, also apperceiving and favorite concepts. So the man bowed down by heavy fate cries out, "I, the miserable!"; the miser, "I, the rich man!"—and he who has committed the heavy deed of murder, cannot think of himself other than under the expression, "I, the murderer!"

Remark 1.—The fact of the ego as an unchanging middle point of our whole concept-life furnishes the ground of our knowledge of the simplicity or oneness of the soul (Comp. § 1). Plato, true to his principle of the objective reality of the ideal, posited three particular souls for the three highest class notions of all mental activity: the knowing, the feeling, and the desiring, and located the first in the head, the second in the breast, and the third in the abdomen.

Remark 2.—Simultaneous with the concept of the ego, is formed the concept of the "thou" as a foreign gathering place of concepts. Man notices that other beings perceive and think. He perceives this in their movements, which are guided by concepts of their environment. When a being governs itself in accordance with the accidental changes of its environment, it appears as intelligent. In that we transfer the scheme of our own ego to this other being, it appears as a foreign ego, or as "thou."

Remark 3.—However subdivided and however wide the world of the individual is, his ego remains always its middle point, the axis around which (but for him alone) the universe revolves. Each, the beggar even included, is a king in this world. The perceptions which he has are his perceptions; everything which he thinks, feels, desires,

and wills, is his spiritual possession. If anything is to have significance for him, it must become a part of his ego. Egotism, as the absolute positing of the ego, which would raise itself to the middle point of the world, is gradually broken by the oppositions against which it strikes. Man finds himself in a society of equally important personalities, for whom he is only what he makes himself to be.

§ 60. THE HISTORICAL EGO.

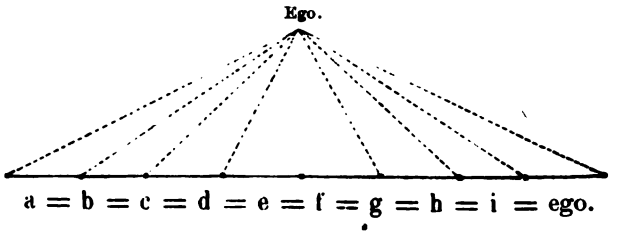
To the notion of the ego are connected a number of paradoxical ideas. All soul states belong to the content of the ego, and yet this content is dependent upon no particular one of these states. For this reason the ego appears in one respect as a changing somewhat, in another as something constant; it is at once the richest and the poorest concept mass.

The ego of man becomes another when his senses change, when serious accidents, sicknesses, etc., touch him, when he alters his principles, his rank, his name; as, for instance, when a Saul becomes a Paul; a citizen, a nobleman; a man of the world, a man of God, or when by marriage a woman takes the name of her husband. But even the change of name—the most fundamental which can come to man, since the name is the outer representative of the abiding personality—is not able to annul the identity of the ego, before and after the change. The personality remains the same, however great its revolutions may be.

The ego which is dependent upon all the manifestations of soul life, and which constantly changes with them, is called the HISTORICAL, or EMPIRICAL EGO of man. It compasses the whole life history of the ego. There is no event, no soul state which does not belong to this ego. This ego is, in strictness, a constant succession of egos which pass over the one into

the other, and which answers to the individual epochs in the biography of the man.[1]

(FIG. 10.)



The pure ego of man is, on the contrary, independent of all these biographical determinations, for the man remains the same whatever occurs to him. This paradox, that from one point of view the ego appears dependent upon the individual states of the soul, and on the other not dependent, is solved by the remark, that though these many changing manifestations do belong to the content of the ego, yet, on account of their opposition, they reciprocally obscure one another (except individual traces) when brought together in the unity of consciousness, and leave behind nothing but empty crossing-points.

The pure ego is, consequently, like the general notion, a common image, an abstraction of the highest type. Just as

1) In reality, the ego of man changes from year to year, from day to day, from second to second. Every moment involves a psychical content peculiar to itself, which is united to the content of the ego as an addition, and, strictly speaking, every moment finds a different ego with one and the same personality. When this is not the case, the health of the spiritual life is lost. Temporarily one, *e. g.*, an actor, can lose himself in another ego, he may regard himself as Napoleon or Alexander; so long as he perceives that he, who just now represented a king, is identical with him who was born of citizen parents in this or that place, and who has had to struggle with these or those life problems, so long does his mental soundness remain undisturbed; if, however, he can no longer remember all his former egos, which have in unbroken continuity passed over the one into the other, the actor becomes a monomaniac.

the general notion can be thought only through its extent (see diagram in § 53), so the pure ego can only be thought through those changeable, empirical egos, a, b, c, d...., out of which the life-history of a particular personality is made.

Remark 1.—Not even the total perception of the body remains the same in the course of life, in order to serve as the constant foundation of the ego concept. Anatomy shows us that in a period of perhaps seven years, our bodies are completely renewed in material, and independently of anatomy, the vital sensations teach the aged man very clearly that his body has no longer the sensitiveness of childhood or the energy of manhood. The more the physical sensitiveness decreases in age, so much the more does the self-consciousness of the aged man withdraw itself into the spiritual concepts, so much the more does the perishing ego approach its immortalization.

Remark 2.—Not only in time succession, but also at one and the same time, may the ego of man appear as manifold, in so far as with him several historical fields of concepts are formed which group about centrifugally inclined middle points. Thus one as statesman, as writer, and as father of a family, may have a divided ego. It is always to be regarded as a very serious condition when these various egos of one and the same personality stand unmediated and unconnected by the universal human ego, as, for instance, when one as official, as Congressman, and as man manifests a different ego. (Compare "Dr. Jekyll and Mr. Hyde."—Tr.)

Remark 3.—Where the division of the ego goes so far that the one ego is no longer related to the others, mental disturbances appear which assume the character of monomania. Since the concept of the body forms the middle point of the ego, such a far-reaching division or a transformation of the historical into an artificial ego is impossible, so long as the bodily basis of the ego concept is not removed by violent and lasting aberrations. But if through somatic causes the vital sensation is wholly changed, the historical ego may, in that the final basis for the identity of the self-consciousness disappears, suddenly change into an abnormal one. (Delirium tremens, somnambulism, clairvoyance). The historical ego here remains permanently obscured. If this could be reproduced through somatic change of tone or through direct physical influence, the patient would be cured.

§ 61. "WE" AS SOCIAL EGO.

Just as there is developed from the individual consciousness the ego as an expression of its unity, so a "we" is developed from the social consciousness.

The social consciousness is formed wherever, in a plurality of physical personalities, there is a common stock of concepts, and a system of conditions whereby the concepts of one personality are able to enter into reciprocal action with those of the others.

The various individuals forming the society must also come into physical relations and meet upon a common ground. For family associates this common ground is the home; for countrymen, the native land; for kindred races, the ethnographical territory of language; for man in general, the earth. The physical territory upon which the interaction of the social members occurs, together with all sense-peculiarities by which the social unity expresses itself externally (language, costume, customs, ceremonies), forms the social body, and is analogous to the physical body, which furnishes the basis for the ego concepts.

But the notion of this body for the social ego, or "we," retreats more and more before the pure spiritual relations which exist between the members, without, however, ever coming to an entire elimination of this sense apparatus. Thus, members of families regard themselves as essentially one, because "the same blood" flows in their veins; fellow countrymen hold together by means of a national "we," because they have the same country, and hence the same circle of immediate sense perceptions; members of the same race see the same physical object of their unity in the language, also partly in like costumes, manners, and customs; and the Catholic church, which is spread over such various nationalities, preserves in the common worship, in the same means

of grace, and the same church language, the symbols of the social "we" of its members.

The social ego, or "we," of a community of men becomes the more developed, the greater the compass of common ideas and concerns is, and the more intimately through association, communication, and social precautions, the ideas in the individual social members enter into a reciprocal interaction, similar to that which the concepts assume in the consciousness of the individual man. The greater the number of members, the more extended the social plane, and the smaller the reciprocal activity of the members, the less is the "we" of this society developed.

The most intense "we" is found in the family, which has but few members, though held together by the most intimate reciprocity. Since the discovery of printing, whereby the circulation of spiritual products is made possible over the widest fields, and in particular on account of the spread of modern means of communication, which makes intercourse more and more intimate over the greatest distances, the national "we" has had an enormous development.[1]

It is of great psychological significance to man that his individual self-consciousness extend to a social one. The ego of man manifests itself as power by actively exerting itself outwardly for the purpose of bringing external conditions into harmony with its inner intentions.

In the measure, therefore, that the social ability becomes greater than that of the isolated man, does the social valuation of self rise, and inspire man to higher deeds. Nearly all great things which have been done proceeded in antiquity

1) Most peculiar in this regard is the preservation of the Jewish nationality through the march of time, and in the widest geographical distribution of this people. But the number of peculiarities perceivable by the senses in this religious nationality is also very great, and they are in sharp contrast with the prevalent conditions and customs lying outside of the Jewish people.

from the political, in the middle ages from the religious, and in modern times from the national self-consciousness.

The highest extension of self-consciousness is seen where it elevates itself to the notion of humanity, through the development of the purely human "we."

Remark 1.—The family, which to woman is a whole world, becomes in time too small in order to satisfy the strivings of the man. He seeks to unite himself to a greater whole—state, church, nation—for this to think, to feel, to do. He thereby enters a wider circle of associates in opinion, in destiny, in party, in moral views, which are united together into a higher moral person through a common "we." "We Germans"—"We Americans"—"We Slavs"—"We Austrians"—"We Catholics"—whoever speaks and thinks identifies himself with a greater whole. The fate of the nation is, then, his fate; its mighty deeds, its history, its future, he makes a part of himself. In the monumental structures which the national consciousness has created, in the churches, theaters, industrial palaces, parliament houses, he moves as in a family inheritance. Still more is this national self-consciousness exalted when it is supported by knowledge and study of a rich national literature.

Remark 2.—As there is a social self-consciousness, so there is a psychology of society (social psychology)—a science on whose development men are now working, though Herbart has laid its foundation. The author has developed the main lines of this science in a work entitled, "Ideas of the Psychology of Society as a basis for Social Sciences," Vienna, 1871. (*Ideen zur Psychologie der Gesellschaft als Grundlage der Social wissenschaft.*)

§ 62. THE INNER SENSE.

When man has once arrived at the consciousness of self, the impulse is at hand to relate these changing inner states to his own ego, and thus at the same time to perceive inwardly. In this way self-consciousness assumes the form of an inner sense.

There are psychical states which proceed without the slightest trace of an inner sense activity. The ego here yields itself to its object of thought with such objectivity and exclusiveness that it entirely forgets itself, and therefore experiences its own concepts without any relation to self. When we experience something entirely new, when we are absorbed with pure objectivity in a scientific problem, or in labor or play, when we are quiet observers of a drama, or attend a trial as a witness, we receive the external impressions with complete self renunciation. The infant and the animal are not able to rise above this objective surrender to the individual states of consciousness.

But it is very easy for him who has arrived at self-consciousness to remember himself and to relate the states of his consciousness to his own ego.

These states are rarely so new and strange that they do not accord with the former experiences of the soul life—the remembrance of older lines of thought is awakened, and because these belong to the content of the ego, the concept of this latter is reproduced. If, however, the ego is in consciousness, these younger and weaker entering concepts find themselves set over against a concept mass which is undoubtedly the oldest and strongest of all. Here we have the conditions of apperception given. The new concepts lose their independence and are assimilated by the ego-concept. This assimilation takes place in the form of the judgment. The newly arising mental state, A, is the subject; the predicate assigned to it, is the thought that *this mental state belongs to our ego.* Thereby the judgment is formed: "A is mine." So long as the self-consciousness is active, all states of consciousness are accompanied by this predicate "mine."

Though the name *inner sense* has been chosen for this process, this metaphor of language should not be taken as an actual analogy between the inner and the outer sense. The

activity of the outer sense is an original one, that of the inner mostly derived and mediated through other states of the mind; there we have a real sense organ, here there is none; there we have a perception, here a judgment; there the act is one of perception, here of apperception.

Remark 1.—Where divisions occur in the egó, in that different ruling fields of thought appear as different egos, the division will also be extended to the apperception of individual mental states through the activity of the inner sense; what is accepted by the one ego is rejected by the other. The *marshal* Manlius judges otherwise than the *father* Manlius, and to this day many come into the position of pronouncing sentence of death as judge when as man they would have pardoned. In drunkenness, in passion, man commits deeds of which he is afterwards ashamed, but shame is nothing more than the feeling of self-humiliation in consequence of the conflict in self-consciousness. Animals have no shame; with children it manifests itself with the awakening self-consciousness.

Remark 2.—Self-consciousness and inner sense go hand in hand in their development. The inner sense is not thinkable without the awakened ego concept, and this again can not be formed without the relating of the scattered elements of mental life to a common middle point through the inner sense activity. The strict expression of self-consciousness is that inner-sense activity where not any accidental mental state, but the ego as such is related to itself. Thereby arises the judgment in which the ego is at the same time subject and predicate, and in which the threatened separation in the ego-concept is avoided—the identical judgment, "I am I."

PART II.

THE FEELINGS.

CHAPTER I.

§ 63. HOW FEELINGS ARISE.

The states of our consciousness are in a continual flux. New concepts constantly enter it, displacing the old; but the latter do not yield without exerting an opposition which depends upon their own strength or intensity, and upon the strength of their reinforcing or assisting concepts.

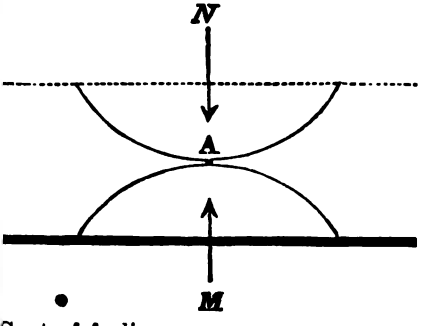
Therefore, there arises in our consciousness a constant *arrest* and *furthering*. If these are weak and transitory, they pass unnoticed. The forgetting of a name or the recognition of a person passes without further ceremony.

But where a concept mass or concept series which was originally in the act of arising into consciousness is suddenly restrained or suppressed by an opposition, X, the concepts will resist the arrest which they are about to suffer, and thereby bring this arresting process to consciousness. The thought process now finds itself compressed between two opposing forces; *i. e.*, between the concepts which *arrest* and those which *further* the movement of thought. *Resistance to arrest gives rise to a feeling, and, more precisely, to a feeling of pain.* If the arrest is wholly or partially removed, in that the opposition is overcome by the furthering concepts, there arises a sudden furthering or promotion of the thought

movement, which we become conscious of as a *feeling* of *pleasure*.

This is made more graphic by the following scheme:

(Fig. 11.)



A—Seat of feeling.
M—Furthering concepts.
N—Arresting concepts.

I. N > M: Arrest, pressure, *pain*.
II. M > N: Furthering, removal of pressure, *pleasure*.

A feeling is, therefore, the consciousness of a furthering or an arrest of the movement of thought: when a furthering, a feeling of pleasure; when an arrest, a feeling of pain.

The life of the soul is a concept life; every furthering of concepts is at the same time a promotion of the life activity of the soul; every arrest of concepts is also an arrest of soul life. Feeling can, therefore, also be defined as the consciousness of the rising or sinking of the real life-activity of the soul.[1]

1) Rising and sinking, however, presuppose a certain level, from which they may be measured upon opposite sides. The level will be that mean average of strength and intensity of concepts above and below which the thought process fluctuates during a certain time, as a river is gauged by its middle stage of water. The mean average is different for different persons, and is subject to significant variations in one and the same individual, according to time and circumstances influencing the state of feeling.

Remark 1.—Examples will make this clear. My friend has died, and the concepts associated with this event produce in me the feeling of pain. The image of the friend as living is supported by a multitude of suggesting concepts (everything which reminds me of my friend; all events, conversations, common opinions, and purposes which unite me to him belong here), and at the same time arrested by a mighty opposition, which can not be thought away; that is, by the idea of my friend as dead, by a conviction of his death which can not be shaken off. Here the opposing concept prevails over the train of associates, hence a feeling of pain. Could this opposition be removed, could, for example, this friend become alive again, this feeling of pain would be transformed into one of pleasure or joy.

Remark 2.—Since arrest and furthering constantly take place in our consciousness, in that ideas constantly come and go, we ought in reality to experience feelings constantly. The most of them are too weak, however, to make themselves individually felt in consciousness. But in their totality they do make themselves felt, since they create an obscure totality of feeling as the result of the individual checkings and furtherings occurring singly in consciousness; this feeling, because inseparably united with the course of the soul's life, is called the life feeling. Since under normal conditions the furthering, or realization of self, predominates over its retardation, or arrest, the life feeling is in general one of pleasure, and life must be regarded as a positive good, despite all pessimistic views. 1)

Remark 3.—Feeling is often confused with sensation. The two are different; for, 1) Sensations are original, feelings, derived states of the soul; 2) Sensations bring to consciousness states of the body, but feelings states of the soul. Hence vital feeling must not be confounded with vital sensation though the two are closely related; for, the vital sensation is only the result of the increase or decrease of mind activity in which the organic body-sensations are concerned, whereas the vital feeling is the effect of all concepts present to consciousness.

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1) Compare in this connection my "Problem of Happiness," ("*Problem des Glücks*") chapter II., "The Pleasure of Existence."

§ 64. CONTENT, TONE, STRENGTH, AND DURATION OF FEELINGS.

We may distinguish in feelings, *content*, *tone*, *strength*, and *duration*.

In themselves, feelings are obscure subjective states, to which in reality a qualitatively determined content can not be ascribed, except in so far as this is borrowed from the concepts which are the seat of the feeling. But this is not always possible, since there are feelings which arise, not from a few distinct concepts, but from many obscure ones (§ 66). Only a few feelings can, as to their content, be precisely analyzed.

The special characteristic of feeling is its tone, whereby it announces itself to our consciousness either as a feeling of pleasure or of pain.

A feeling of pleasure arises in consequence of every change of consciousness whereby the degree of ruling tension (reciprocal arrest) between the concepts is lessened, and consequently the mental activity temporarily promoted, even though but partially; a feeling of pain, on the contrary, arises in consequence of every movement of concepts whereby their degree of tension is increased, thus decreasing the quantity of mental activity.

Since the mental activity of the soul is of limited magnitude, its increase is only possible up to a certain point. If this point is once reached, a diminution of the same must occur, which, if suddenly suffered, announces itself subjectively through a feeling of pain.[1]

1) Hence arises the fact, fully confirmed by experience, that in our mental life feelings of pain and pleasure must alternate. Sudden elevations of mental activity may here be followed by just as excessive depressions, as we perceive in the case of passions and surprises in feeling—or gradual subsidence and unimportant oscillations of mental activity may follow its gradually reached exaltations, as we see when intense activity alternates with rest, and the mind is free from violent agitations.

The *intensity* of feeling depends upon the liveliness of promotion and repression, hence upon the intensity of opposing and furthering concepts. (M and N in the diagram of the preceding section.) The most intense feelings arise when the most numerous and most powerful furthering concepts meet with the most numerous and most powerful opposing concepts. They arise from the furthering and arrest of concepts which spring from impressions of sense or in extensive and intricately interwoven groups of concepts. The liveliness of the furthering is dependent upon the intensity of the arrest which precedes it, so that within the period of our mental life on earth there can be no unceasing and unclouded joy.

The duration of feeling depends upon the continuation of the concepts as unimpaired in strength. Sensations are indeed very intense, but their power ceases with the sense impression; hence, the transient nature of sentient joy or sorrow depending upon them. Much more lasting are those feelings which have their seat, not in immediate sense impressions, but in extensive, widely branching, and deeply involved groups of concepts. Such feelings can only fade, as "in time" these concept groups have lost their power.

Remark.—Pleasure and pain are relative. Diminished pleasure may be felt as pain, and lessened pain as pleasure. An event which to-day gives me joy, may leave me indifferent to-morrow. It is not the absolute exaltation or depression, but the relation which determines the degree of intensity in feeling. In this way are to be explained the illusions which occur in reference to the valuation of external objects, in so far as they appear as vehicles of certain feelings of pleasure. A gift of a hundred dollars produces a different effect, according as the recipient is rich or poor. (§ 16. Remark 3.)

§ 65. FEELINGS AND CONCEPTS.

Feeling is not an isolated activity of the soul; the feelings exist in and with concepts, and apart from concepts are nothing. *Every feeling has its seat in a concept mass*, so that it always arises whenever the elements of that concept mass meet in consciousness. Thus, the grief for a lost friend returns as often as we are reminded of him.

Since feelings depend upon concepts, so, likewise, do they share the fate of the same. There is a REPRODUCTION OF FEELINGS in and with the reproduction of concepts; one may even speak of a memory and imagination of feelings. Here, however, the peculiar fact is observed that reproduced feelings are far inferior to the original in intensity; for, the intensity of feeling is essentially dependent upon the power manifested by the concepts, and this in reproductions is incomparably less than in the original concepts. We have only a brief and feeble memory for feelings. The mental pain, like the physical, loses its sting when the first impression has passed, and the concepts which have effected its tension return only as reproductions. Time heals all wounds, for it gradually lessens the mental tension by gradual changes in consciousness.

The imagination is a fruitful source of feelings. It encompasses things with a peculiar coloring of emotion by means of the minor concepts which are connected with them, so that these things affect us, now as agreeable and inspiring, now as repulsive and depressing. A glade in a forest, a simple crucifix in the still loneliness of the woods, a graveyard, a place of execution, a ruin, inspire peculiar feelings.

The understanding quiets our concepts, since it seeks to bring them out of their often intense combinations into those conditions which answer to the content of what is thought, and to substitute natural solution for unnatural tension. *Reason is the universal extinguisher of feeling*, particularly

when violent; with its logic it seeks to lessen our pain by showing its insignificance or its inevitableness.[1]

If on the one side the reason forms the corrective for the overflow of the heart, it is on the other the fountain and creator of those quieter and nobler joys which spring from insight into the harmony and design of the world of thought. The creations of fancy in the realm of the beautiful and of art are mediated by the activity of the understanding, or at least subordinated to its rules.[2]

Remark.—The manifestations of feeling are also dependent upon the rhythm of the concepts according to which they come and go in consciousness. The quicker rhythm, as observed in sanguinary temperaments, in children and in the female sex, to whom good humor and a happy frame of mind are natural, carries with it a light wave of feeling in which freedom predominates over tension, and consequently pleasurable over painful feelings. The opposite is seen in the more retarded rhythm, as found in the melancholy temperament, and in the age of manhood, as well as in states of depression and sadness. Everything which accelerates the rate of our flow of representation, as, for example, lively music, the light conversation of an affable companion, the yielding of the mind to the changeful scenes of an external comedy, produces an enlivening effect upon our mind, whereas the unchanging absorption in one's own concept masses with the exclusion of every diversion from without, is the characteristic expression of sadness. The grieving Niobe petrified in her pain.

§ 66. CLASSIFICATION OF FEELINGS.

The manifoldness of feelings is very great, since every movement of concepts is accompanied by the excitation of

1) Every pain loses its sting as soon as it is logically analyzed. Says a gifted writer, "I have never known an evil which could not be made endurable by a half hour's reflection." If it were possible to make a mental analysis of physical pain, it would certainly be easier to bear.

2) In the creation of works of art, even if genius should not be conscious of the limitation of rules, yet approval of the beautiful rests essentially upon their observance, and the art critic applies them in passing judgment upon works of art under all circumstances.

feeling. Apart from the division into feelings of pleasure and pain, which occur as subdivisions with every kind of feeling, one may in general classify the feelings according to the concepts in which they have their seat.

Feelings may have their source in *general conditions of consciousness* or *in particular, definite concepts.* In the first they are called *universal* or vague; in the second *definite*, or ready feelings. The universal feelings are diffused over a large and mostly undefined field of concepts,—the definite feelings, on the other hand, arise from definite, sharply defined concept masses, which are brought into relief against the general background of consciousness. The universal feelings bear a *formal, subjective, obscure* character, while the definite are of a *clear, objective*, and *qualitative* type.

The vaguest and most universal of the feelings is the "vital feeling," because it is the effect of the whole number of concepts streaming through consciousness.

This boundary line is, moreover, not a sharp one. In actual mental life a universal feeling is at once transformed into a definite one, when in the stream of concepts any one is raised to a certain degree of clearness, thereby becoming the middle-point of the whole. The feeling of apprehension is certainly universal; yet it assumes a definite character when I become clearly conscious of the real cause of my uneasiness. Just so, my general feeling of pleasure in good order which arises upon my entrance into a well-ordered house, passes over into definite feelings as soon as I turn my attention to the individual articles of the household,—the vague feeling of hope becomes, under certain circumstances, an expectation of some particular event.

Another division is that of *lower* and *higher* feelings, according as the mental activity upon which the feeling rests, proceeds without the mediation of intelligence or with it.

The universal or vague feelings belong almost entirely to the lower kind, since, having their root in an indefinitely large number of concepts, they elude logical analysis, and vanish mostly without our aid.

With the definite feelings, the higher must be expressly distinguished from the lower. The former rest mainly upon concepts which have been sifted by understanding and reason, whereas the latter have their seat more in sensations and reproductions.

To the higher feelings belong in particular those connected with concepts of the true, the beautiful, and the good; then with concepts about God, the ego, and the relations between me and thee.

§ 67. THE UNIVERSAL, OR FORMAL FEELINGS.

The most universal form of feeling is the arrest and furthering of concepts, a process which may also be regarded from the standpoints of tension and relaxation, diminution and increase, depression and elevation of mental activity.

The universal feelings rest upon certain modifications of this process arising from the accession of more immediate circumstances. These modifications, to which the various kinds of universal feelings correspond, are:

1. *Retardation and acceleration* as modification of the rhythmic movement of concepts. Music, dancing, conversation, play, may bring about an acceleration; monotony, darkness, stillness, idleness, a retardation. The former are associated with pleasure; the latter, with pain. The same actions or states may appear as,

2. *Oppression and relief*, the first being brought about by the rush and arrest of many concepts meeting in consciousness; the second, by the removal of the pressure; a

retardation of the tension being produced by the entrance of decisive apperceiving concepts. Related to this are,

3. *Exertion and overcoming* as difficulty and ease in bringing about the release. If by means of a problem, a predicament, a lecture, and the like, more is assigned to us than we can do, at least for the moment, we have the painful feeling of severe exertion. If we succeed, however, in finding the solution by a reference of the new to the old (apperception), and in turning our thought into its accustomed channels, we have the pleasurable feeling of ease. All our customary actions are performed with the sense of ease. In connection with these activities we have, then,

4. *The sense of power and of helplessness* as the feeling of superabundance or lack of personal capacity, according as the solution of the problem before us is performed with ease or with difficulty. In these feelings vital sensation has an important part, since power is originally merely physical, and a feeling of power is conditioned by the presence of a certain degree of bodily health[1]). With this are connected,

5. *The feelings of labor, of recreation, and of play.* The feeling of labor is a painful one, which arises in consequence of the continuous pressure of one and the same mass of labor concepts, and is painful in proportion as the labor is offensive to us, that is, the more these concepts stand in opposition to our ruling ones.

The pleasure of recreation is characterized by the throwing off of labor, in which the labor concepts are made to yield. Play is connected with pleasurable feelings because one busies himself with things only so long as they please, and have no trace of labor.

6. *Agreement and strife, confusion and order, reflection and investigation*, are universal feelings of a similar kind,

1) The pleasure found in riding, scuffling, wrestling and boxing, is to be explained through this increase in the feeling of power.

which in a certain sense form the transition to the *higher*, or intellectual feelings and which rest essentially upon the logical quality of our consciousness, whereby order is more pleasing to us than confusion, agreement than strife.

The above named feelings deserve the name universal, since they are independent of a special content in the concepts.

Remark—The feelings of labor and recreation are especially important, since our whole life is bound up in the rhythm between the two. During the time of labor there is a certain ruling mass of concepts in the soul of the laborer which involves in itself the idea of the end desired, and of the means to this end. This mass of labor concepts rules the consciousness more or less during the time of labor, and therefore exercises an increasing pressure upon the other concepts which press into the consciousness of the laborer, and which pertain to other pursuits, interests, and lines of thought. If the labor is laid aside, its accompanying concepts retire and others take their place—the man rests. This recreation, which consists in freedom from the burden of labor, is merely negative, mere relaxation; should this continue long, the emptiness which it implies would bring about a retardation of the course of thought, which would be as oppressive as the labor was. For this reason a positive recreation must be sought, which brings new concept masses to consciousness, but which will exercise no oppression upon the mind, because of their change. Plays especially attract us on account of their manifold variety of situations. Entertainment seeks to free us from the monotony of *ennui* by means of sports, of spontaneous, enlivening conversation, of participation in light games, festivities, or through giving the mind up to the enjoyment of art, etc. As unconstrained employment it is the opposite of labor, which is never free from a certain element of constraint.

§ 68. SENSUOUS FEELINGS.

To the definite, or particular feelings of the lower class belong first of all the feelings which are connected with the various sensations, and which may be called the sensuous feelings.

Those sensations of the lower senses which have positive tone, as well as the body-sensations, are reflected in our consciousness as obscure sense feelings. [1] The pleasures of the gormand do not rest alone upon sensations of taste, but also upon feelings which precede, accompany, and follow the sense impression. The variations of the vital sensations have a strong influence upon our feelings.

But those sensations of the higher senses having the most positive tone, as those of color and sound, are in themselves accompanied by sensuous feelings. In order properly to appreciate the specific effect of these feelings which even the various colors and sounds arouse in the mind, we must abstract from all æsthetic impressions, which belong to the higher realms of feeling; and, farther, from all accessory feelings which arise through reproductions.

The pleasure in the sense of sight reveals itself in the pleasure we take in light and color, while darkness and imperfect colors, by which we understand all dim, unsatisfactory, confused impressions of color, are accompanied by unpleasant feelings. The moderate light of day, the mild light of the full moon, the soft light of the heavens, also the fires of celebration upon the hills (*Johannis Feuer*), the gleam of illuminations, the splendor of fireworks, awaken in man the pleasure in light, whereas the darkness of the night and of the prison cell lies heavy upon the soul.

From the pleasure arising from light in general, we must distinguish the specific impression which individual, full, rich colors produce upon the mind, and whose importance Goethe

1) It is not here asserted that the sensuous feeling is identical with the "tone of the sensation," as is sometimes assumed. The sensuous feeling proceeds from the sensation having tone, and shares with it the characteristic obscurity and essentially also the same tone. But at the same time it is separable from the sensation and may assume the opposite tone. There are moments when even wounds do not pain, and there are others when the best of wine is not pleasant to the taste. The sensation is present, but the feeling is not.

has pointed out in his theory of colors. *Physically*, this impression is dependent upon the wave-length and the intensity of the prevailing homogeneous light which produces it—*physiologically*, upon the individual and momentary state of the optic nerves, and the relation of this state to the quantitative and qualitative light stimulus—*psychologically*, upon the numberless obscure minor concepts which in accordance with experience have become associated with the various colors. "The clear, bright, cheerful, charming quality" which is ascribed to yellow stands in evident connection with its medium length of wave and its great intensity of light.

The special energy and power of excitation which are ascribed to red, and which even excite the turkey cock, correspond to the maximum wave-length belonging to this color, aside from the fact that red is the color of fire and of blood. Blue, standing as the opposite end of the spectrum, is characterized by the opposite qualities[1]). Yet a wide realm is open to the imagination regarding the specific effect of color, which is fondly explored by poets and even by mystics.

Tone, like color, affects our sensibilities. The pleasure in light and color is analogous to that in tone and sound. Stillness depresses like darkness, because it retards the course of our representation; full, pure, prolonged tones affect us like full, rich colors. With regard to the special effect of sound, the high tones appear analogous to bright colors and deep tones to dark colors. How indescribably peculiar the

1) Habit, remembrance, and even fashion may here contribute much. The fashion of the times, answering to the *blasé* condition of so many people, turns from the full colors, in the toilette, toward defective colors, in particular toward gray, black, and mixed colors. The man who, being born blind, receives his eyesight through an operation, hates black because it reminds him of his former night. Hofbauer's patient of this kind had the greatest pleasure in the red of the rose. The rose bushes in the garden where his bands were first removed were in full bloom, and the red of the rose gave the first greeting of light to his eyes. (Compare the attractive exposition in Nahlowsky's "Gefühlsleben.")

effect of tone is upon the mind, is proved by the impression which the human voice, by means of mere intonation, aside from other æsthetic or spiritual factors, is able under certain circumstances to exert upon us.

Remark 1.—Regarding the subjective effect of color, Goethe's theory of color is not yet antiquated. In order to investigate this effect, one must, with Goethe, surround himself with a single color, remain in a room of one color or look only through colored glasses. Then one identifies himself entirely with this color; eye and mind are thereby brought into unison. There is a plus and a minus side upon Goethe's scale of colors. The positive colors, yellow, orange, vermilion, attune to activity, liveliness, endeavor; the negative colors, blue, violet, and purple, attune us to quiet, gentleness, longing. In the middle stands the green, which is indifferent.

Remark 2.—Professor Nahlowsky has sought to place the timbre or tone-color of sounds parallel with the color of light. According to him the clear sound of the reed pipe corresponds to yellow; the flute tones coming from afar, to sky blue; the sharper, more penetrating tone of the piccolo, to orange; the hautboy, especially fitted to express yearning, to violet; the inspiring trumpet, to bright red; the majestic sounding trombone, to purple; the silencing tone of the forest horn, to indifferent green (Compare "Das Gefühlsleben" by Nahlowsky.)

§ 69. OTHER LOWER FEELINGS.

A second group of special feelings of the lower order arises from the interaction of sensations and reproductions.

The simplest example of this is the feeling of pleasure in the recognition of an object. The sense-perception is intensified by the corresponding reproduced concept of the object, and this activity becomes noticeable as the pleasure of recognition. When amid a crowd of strangers we meet a familiar face, or in a strange neighborhood we come upon a well-known path, we have this feeling. [1]

1) This feeling is noticeable in animals; for instance, the joy of the dog at the recognition of his master.

Closely related are the feelings of expectation, and the occurrence of an expected event. Expectation is the anticipation of a future event on the part of the imagination, which hastens on before it. The reproduced concept of the future event is intensified by a number of furthering concepts, or arrested by the opposing perception of the reality, for the result is not yet come to pass. Since these furthering concepts oppose the arrest, expectation is associated with feelings of pain. The concept of the expected result is constantly furthered by the helping concepts, only to be again arrested by opposing ones. Thus, he who awaits an event constantly rolls up the stone of Sisyphus, which as constantly rolls back again. The curtain in a theater should rise, but it does not; the train should arrive at the depot, but still its approach is not heard; the eclipse of the sun should begin, but the face of the sun is not darkened. As soon as the expected event does occur, actuality and expectation coincide, and from this coincidence of the two proceeds the feeling of pleasure.

Analogous to the above are the feelings arising from searching and finding; only here the object is not passively awaited, but is actively sought through all manner of actions, so that the oppressive feeling of *ennui* which accompanies expectation is avoided.

Where the desired result is an activity, the feelings of success or of failure arise. The activity is here mediated by a concept series, which mirrors beforehand the various stages of the activity, and whose final member is the concept of the result to be brought about. If, now, the individual stages of the concept series correspond to the actually progressing activity, and especially to the final result, we have the pleasure of success, which accompanies the skillful laborer as well as the skillful player. But if concept and result do not correspond, we have the depressing sense of failure. Hence

the interest in games of skill (billiards, sharpshooting, hunting); hence, also, the moral recompense which productive labor, whatever it may be, brings to the active worker.

The given illustrations are only examples of the numberless special feelings which arise from the interaction of sensations and reproductions in the course of our mental life. An exhaustive classification of them is hardly conceivable, since feelings may be associated with every combination of simultaneous concepts.

§ 70. HIGHER FEELINGS.

Higher feelings have this peculiarity, that they depend not so much upon the subjective state of mind, as upon the valid and necessary quality of what is felt. Here, therefore, we may point out the objects to which they relate, as well as distinguish the special content of the feelings. Such objects are above all the TRUE, the GOOD, and the BEAUTIFUL (then, also, our own ego and other egos).

The possibility of such feelings rests upon the fact that there are objects which are compounded, and whose parts have such a harmonious or unharmonious relation to one another that one needs only to give himself up freely to their apprehension in order to experience a furthering or an arrest of mental activity. Man's consciousness is of course the theater of these feelings; but the furthering or checking concepts involved do not come together by accident, but are rather already given with the object in their harmonious or inharmonious relations, without the need of any subjective contribution.

Such an object we find in TRUTH, with its antitheses falsehood and doubt, which together form the object of the intellectual feelings of pleasure or pain. Truth is the agree-

ment of all our knowledge with itself, the parts with the whole, the subjects with their predicates. This agreement is not only known through the understanding, but is felt as *pleasure in the truth.* The further we advance within the borders of truth, the more does this feeling appear as pleasure in investigation. But on the contrary, where we fall into contradictions with our notions, out of which we see no way; where we see unsolved problems before us, or where the objects of our inmost conviction are doubted or denied, there we shall not fail to find intellectual feelings of pain.

The harmony of truth with itself is the source of our intellectual feeling of pleasure; yet to perceive this harmony is given only to him who does not spare himself the trouble of investigation within the borders of its objects, which are mostly abstract. But there is a class of objects which are not abstract but sensuous, and which manifest such harmony of parts that every unbiased observer experiences a feeling of pleasure when he yields himself to their contemplation in such a way that this harmony appeals immediately to the senses. Such objects are called beautiful, and the feeling to which they give rise is the feeling of the beautiful, or the æsthetic feeling.

The beautiful is distinguished from the true on account of its *sense* side, and in the *ease* with which every unbiased observer is able to apprehend the harmony revealed in its composition. The relation between the three sides of the right-angled triangle, which the Pythagorean theorem reveals, shows a wonderfully harmonious relation existing among them; but this relation is not beautiful, because a look at the right-angled triangle does not reveal it; only a tedious calculation makes it an object of knowledge. On the other hand, the agreement of the octave with the key-note is beautiful, for we can hear it; and the harmony among the parts of the perfect human form, for we can see it.

The ugly is the opposite of the beautiful. Objects are called ugly when in the composition of their parts instead of agreement or harmony, we find the opposite, and in such a way that this disharmony appeals immediately to the senses. An object which is not beautiful, is not on this account ugly; it may be æsthetically indifferent. A block of stone is neither beautiful nor ugly, but may become either when formed by the sculptor. Every child perceives that a statue with a hand broken off is ugly, because the harmony of the parts is disturbed. Just as the false is related to the true, so the ugly is to the beautiful.

§ 71. INTELLECTUAL FEELINGS.

Elementary intellectual feelings are those which accompany the activity of judging (§ 49). The stage of reflection is characterized by painful, and that of decision by pleasurable feelings.

The reflection consists in the vacillation of the reciprocally opposing predicate concepts in connection with a stationary, but still indistinct subject concept. This equipoise of vacillation is only sustained by the like distribution of the grounds of judgment among the manifold predicate concepts, and is therefore a struggle for synthesis with the subject. The tension and the thronging of concepts, no one of which is able to rise to the degree of clearness requisite for the final determination of the subject, reveal themselves as the feeling of indecision, on account of the preponderating arrest of mental movement. When important theoretical and practical consequences are attached to the conclusion, when accordingly whole groups of concepts are involved in the struggle of reflection, the feeling of indecision may give rise to great agitation.

This is particularly the case with doubt, which is indeed only a continuous, protracted reflection. Theoretical doubt has found a poetical personification in Goethe's *Faust*: and practical doubt, in Shakspeare's *Hamlet*.

If the impartial division of furthering concepts among the predicate concepts is altered in favor of one of the latter, the decision is brought about. The furthering of the favored predicate concept is perceived as the pleasure of decision. Doubt is overcome—truth is here.

Intellectual feeling as a whole is that which becomes associated with the gradual growth of our convictions and with the progress of our scientific knowledge. This feeling rests upon the agreement or disagreement of our newly gained notions and judgments with the totality of our acquired knowledge and convictions. The assimilation of the new with the old is accomplished through apperception. The easier this apperception is, the better the new fits into the frame of the old, the livelier will be the feelings of pleasure associated with this activity. On the contrary, the greater the disagreement between repulsive individual ideas and judgments and the totality of our present convictions, the more intense will be the feelings of pain which will then arise.

The disagreement, and with it the feeling of pain, reaches its highest degree of intensity when the older, more established masses of concepts which as the principles of our theoretical and practical reflection have thus far prevailed as apperceiving forces, are themselves apperceived by means of newly entering, more recent masses of concepts; in other words, *when the course of apperception is reversed.* This occurs when one gives up his faith, changes his principles, or places himself upon an entirely different standpoint in regard to the problems of life. Such a mental conflict would naturally be associated with great agitations of mind (§ 45).

From true intellectual feelings, which accompany the clear grasp of truth and the graduated progress toward it, must be distinguished that obscure sense of truth which arrives at the right conclusion without ever becoming conscious of logical relations (instinct for truth).

Remark.—The feelings associated with reflection and decision deserve the name *intellectual* only when the reflection is free from every subordinate selfish interest, when it is inspired only by the desire for truth. These feelings, as the pure and refined love of truth, reached their culmination in the philosophy of Socrates. Philosophical speculation is the opposite of the commercial; the feelings associated with the latter can not be enumerated among intellectual feelings; for they proceed immediately from the satisfaction of desires for gain,—not the acquisition of the truth, but that of material goods.

§ 72. ÆSTHETIC FEELINGS.

The æsthetic feelings are feelings of the unconditioned valuation of an object, arising from its direct apprehension by the senses, and free from all subordinate external interests, which announces itself as pleasure in the beautiful or displeasure in the ugly.

In that this valuation is an unconditioned one, it is distinguished from that of the useful, in which the object is preferred, not for itself alone, but from other reasons, *i. e.*, conditionally; in that it is free from all external subordinate interest, it is distinguished from that of *desire*, which lends to objects a very changeable value, dependent upon transitory states of mind; in that for every unbiased observer it is easily made upon a direct sense apprehension, the valuation of the beautiful is distinguished from the estimation of the true, which latter leads to intellectual pleasure only through the changes of reflection and through abstract thought, painful to some extent.

Æsthetic feeling is distinguished from the feeling of the agreeable and disagreeable in the fact that the latter is a sensuous feeling, clinging to the individual sense impression, and hence not separable from it—whereas the æsthetic feeling as something higher does not depend upon the *content of the individual*, but upon the *form of the composite*, yet is by no means so intimately connected with it as not to be separable from its material content and capable of being analyzed in thought. The agreeable in sugar is precisely the sensation which it occasions; no new element is here added, but the sensation is identical with its content. The beauty of a musical accord, on the contrary, is different from the individual tones, and can only be predicated by their synthesis; the beauty of an architectural structure does not lie in the stones, but in a certain regular arrangement of them. Regarding the agreeable, we are not able logically to give the ground of our pleasure, because we have here to do only with a single thing, which eludes all logical analysis, whereas with the beautiful we are able through reflection to find this ground in the relations of the æsthetic object [1].

This is actually the case in æsthetic criticism. Here we must distinguish, not only whether the object is beautiful or ugly, but also to what extent it is the one or the other. This is done by analyzing into its elements the sum of feeling which is awakened in an unbiased observer, and by pointing out the relations which give rise to them.

But such an analysis as the art critic makes in passing judgment upon a work of art is by no means a condition of æsthetic enjoyment. Æsthetic feeling of pleasure arises

1) Herbart expressly remarks that "also that which is perceived in the feelings of the agreeable and its opposite is synthesized from partial concepts which can not be separated from one another in consciousness, which, however, stand among themselves in relations similar to those of partial concepts in the case of æsthetic objects." (Psych. II. p. 110.)

rather as the result of satisfaction and harmony coming into our consciousness from the beautiful object itself, even where the originating concepts have not risen through apperception to that degree of clearness demanded in adequate critical valuation of a work of art. Without understanding the architectural plan of a Gothic cathedral, we perceive the imposing effect of the pointed arch with inward satisfaction; and without the faintest suspicion of the hidden laws of harmony, we have, upon hearing a piece of classical music, the feeling that all should remain as it is, thus arriving at the same result as that to which the critic comes after careful examination of details.

Remark 1.—The simple is neither beautiful nor ugly. The single tone, the mathematical point, the simple color, are indifferent objects. But where two tones are heard together or in succession, there arises in addition to their apprehension a feeling having an æsthetic nature. However, the repetition of one and the same tone without interruption or at equal intervals calls forth rather weariness than pleasure. The individual parts of a pleasing whole may not therefore be absolutely alike, but must rather be different; yet despite this difference, they must agree with one another, that is, must form a unit. This unity in difference, this agreement among the manifold, this concord of the different, is called harmony, a term borrowed from music. Harmony is therefore agreement where there might have been discord. The greater the conflict is, which finds its reconciliation in the beautiful parts; the more the parts originally tend to separation, which are harmoniously brought together in the work of art, the more does this agreement make itself felt to the apprehending spirit as beauty. The octave is too nearly identical with the key-note, appearing as its mere repetition, to call forth æsthetic pleasure upon being sounded with it. When, on the contrary, tones which are originally discordant are brought together into an accord, or where different chords are blended into a greater totality of tone, this reconciliation of differences is especially apparent. This explains the resolution of dissonance in a piece of music, as well as the harmonizing of conflict in that species of the beautiful which is called the tragic. Since the simple is everywhere æsthetically indifferent, relations must form the object of æsthetic preference or rejection; with tones it is the

relation of the numbers expressing their vibrations which decides regarding their harmony or discord. The simpler this relation is (1:2 in the octave), the more easily is the harmony perceived, the more complete is the agreement. With forms also it is measurement which produces the æsthetic impression. For example, the pleasure in normally developed human forms is produced only by the determinate harmonious relations of measurement in which the various parts stand to each other; *e. g.*, the height, length of arm and leg, size of head, angle of the face, etc. Though not clearly conscious of this exact measurement (Albrecht Dürer has made the proportions of the human body a special study in his works), we yet perceive their effect very clearly in our feeling. Architecture also employs these pleasing and determinate proportions, as is seen in the arrangement of columns, in round and pointed arches. The measure of the meter in poetry, the rhythm in music, which, in accordance with fixed relations, divides the time in which the musical tones occur, depend also upon numerical measurements.

Remark 2.—On account of its sensuous externality, by means of which its apprehension is so easy, the beautiful is especially fitted to affect the sensibilities of man, and by appealing to the senses to raise him to higher things. Nature in her visible forms manifests much of the beautiful. The landscapes of nature, the starry heavens, the regularity of crystals, and the organic creations are beautiful. But the beautiful of nature often eludes human grasp, because the regularity in natural forms and processes is often too obscure, often too complicated, often too greatly extended in space and time, for sensuous apprehension. Therefore the production of the beautiful has ever been the end of art, which tries through creative activity to beautify life, to elevate the mind above crude sensuousness and to make it receptive for a higher ideal world. The fine arts show that matter and sensuousness are not the ends in life, but only means for higher, supersensuous ends. Even the savage mind, buried in gross sensuality, is affected by the wonderful power of tones, and stirred by the inspiring representations of art. (Cranes of Ibycus—Saul and David.)

§ 73. ÆSTHETIC FEELING IN ITS ELEMENTS AND AS A WHOLE. FORM AND CONTENT OF THE BEAUTIFUL.

The elementary æsthetic feeling is that which arises through the apprehension of pleasing or displeasing relations

of a fundamental nature; the æsthetic feeling as a total is, on the other hand, that which proceeds from the united effect of many such relations harmoniously blended in one and the same space or time object.

Two parallel lines, the round or the pointed arch, the consonance between two tones, the symmetry of an object, the rhyme and the meter in poetry, etc., are pleasing fundamental relations which excite our simplest æsthetic feelings. In the form of a tree or the façade of a house we find the relations of symmetry united—in a poem we find the meter and rhyme producing a general effect, which calls forth our æsthetic feeling as a whole. The union of a number of fundamental æsthetic relations into a total effect, which calls forth the pleasurable feeling of harmony in every unbiased observer, can not arise when these relations are confused, but only when they enter upon a higher unity in accordance with some definite plan or some idea.

In the beauty of nature, this idea appears as creative thought in the arrangement of the subject. The organic forms of plant and mineral are beautiful, and the human form is the most beautiful. In vain do imagination and art attempt to surpass nature in the creation of beautiful objects. Art may indeed bring together into special groups the scattered members of the beautiful in nature, but it will never succeed in surpassing the natural archetypes. The highest productions of creative imagination in the plastic art are the Olympian gods; but they bear the human form; every attempt to heighten the charm of the human figure by additions not accordant with nature ends in sinking into that which is below the human.

With the beautiful of art, in whose portrayal the hand and soul of the artist act in freedom, the idea lying at the basis of the whole is an affair of the artist's conception—it is the Promethean spark which reveals the *form* of the work

of art, as its ideal *content.* It is this idea which governs the mental state of the artist as an apperceiving concept during the period of his artistic creation; all details of the artistic total must be subordinated to it. Since it appears as the central point for the whole of these relations, it may be correctly characterized as the æsthetic content of the artistic product.

The apprehension of the idea lying at the basis of the beautiful object as the æsthetic content of the natural or artistic whole is brought to our subjective perception as a system of harmonious fundamental relations, through the æsthetic feeling as a total.

The greater the sum of individual æsthetic relations, and the more complex their combination into a total of effect, the higher will be the total of æsthetic feeling which this object produces in us.

Remark 1.—It is Herbart's undying service to have revealed the secret of the beautiful by pointing out the fundamental æsthetic relations. The essence of the beautiful was thus placed in the *form* of the object. Whether this form alone comprises the basis for æsthetic pleasure, or whether the latter is not rather to be sought in the *content* inclosed by this form, has recently formed the basis for a lively controversy between the Herbartian school and the adherents of Schelling and Hegel. This controversy is easily settled by the explanations of the foregoing paragraph. The beautiful object does indeed affect by its form, but the form is itself determined by the content, or the idea. Considered by itself, the idea has only a logical, never an æsthetical character (plan of a house, content of a poem); the idea receives an æsthetic character, only when put into æsthetic form. Even the musically beautiful can not entirely free itself from the content, especially in the higher kinds of music (sonata, symphony, tone-pictures, opera), even though it must be admitted that this content is less to be sought in a clear, logical idea, than in an obscure harmony of soul in the musician, which appeals to the hearer more as a matter of sensibility than as one of logical clearness.—The Herbartian school have shown themselves inclined to admit the content alongside of the form as a determining element in the beautiful.

(Compare the excellent treatment of this matter in "Nahlowsky's Life of Feeling" p. 181.)

Remark 2.—The relation between form and content, as well as the part each performs in the whole æsthetic effect in various arts and art works is very different. The ideal content is greater in speaking than in plastic arts; greater in the latter than in music, in which the content is to have greater value with the so-called *musicians of the future* (See the controversy between C. Hanslik—"Concerning the Musically Beautiful," and W. Ambros—"Regarding the Boundaries Between Music and Poetry"); it is greater in historical pictures than in landscapes; greater in the drama than in the idyl; greater in Schiller than in Goethe.

§ 74. ÆSTHETIC TASTE.

A judgment through which the attribute beautiful or ugly is ascribed to an object is called an æsthetic judgment. The subject of such a judgment is a concept of the æsthetic object, which must be synthesized as such; the predicate is the *æsthetic feeling.*

According as this feeling is elementary or total, the judgment is elementary or general. The faculty of æsthetic judgment is called taste.

The æsthetic judgment has an original self-evidence; for the predicate contains as feeling that which the subject presents as mere concept. Here is revealed the *progress* involved in the æsthetic apprehension of an object in comparison with the merely theoretical apprehension. The latter pauses with the logical separation of the content of the concept; the former goes further and adds feeling as a new element. "He who sees nothing in a picture but the painted canvas has not seen the picture."

Notwithstanding the fact that the predicate of the æsthetic judgment is a feeling, there must be ascribed to this judgment an absolute validity, which is independent of the variations of subjective states of mind. This may be seen

from its self-evident character. The variations in the æsthetic judgment of things is to be explained through the fact that with the pure æsthetic approval, are mixed other kinds of valuation, such as the utilitarian, the agreeable, and even the accidental. The æsthetic apprehension demands that the idea of the æsthetic object as a whole shall be freed from the other changeable and accidental elements in our consciousness, and regarded solely in respect to its effect upon the sensibilities—a demand which in truth is not often fully complied with. Instead of approaching a work of art with unprejudiced minds, and of allowing ourselves to be led solely by the beauty of its form in our estimate of its æsthetic value, we approach it with all sorts of expectations, and with ruling or hastily produced apperceiving concepts, which unconsciously to us influence and color our æsthetic judgments—and perhaps allow ourselves to speculate upon those effects which proceed from the expense of the material, the richness of the surroundings, or from the political, religious, or other motives contained in the work of art. Our judgment is then no longer purely æsthetic.

On account of this mixing of æsthetic approval with subjective expectations and the ruling ideas of the day, our æsthetic taste sinks to mere love of fashion, which is characterized by extraordinary relativity and changeableness. There is nothing which fashion can not regard as beautiful. The ugliness of that which fashion pronounces beautiful appears when we pass judgment upon modes no longer fashionable. Notwithstanding all this, the absoluteness of æsthetic judgment and with it the validity of æsthetic taste remains. All that is needed is the unbiased state of the mind as a subjective condition of pure æsthetic apprehension, the same lack of prejudice which we see to be a condition for the apprehension of the true. "Man must deny himself;" that is, his subjective expectations, inclinations, selfish

interests. Then only should he attempt the apprehension of the true or the beautiful.

Remark.—If truth presupposes a pure, unprejudiced, dispassionate state of mind for its apprehension, this is demanded in a still higher degree in the case of beauty; for, the essential element of the beautiful, with which it overflows, is a feeling, that is, a state of the mind; but objective beauty cannot mirror itself in a mind that is excited with passion. The beautiful, like the divine, presupposes a devout frame of mind, a purified heart which approaches its altar. The uncultured mind seizes the object (chiefly through the lower senses), in order to make it a means for the satisfaction of desires; it is not the form, but the material of the object which is preferred. Æsthetic apprehension leaves the object untouched which it approaches, only with the higher senses in silent devotion. "Man does not desire the stars—he rejoices in their beauty" (Goethe). Not without reason is religious worship blended with the æsthetic, especially in the Catholic church. What has been said holds especially in regard to sensibility to music, and, since cause and effect here strengthen each other, to its purifying power; Shakspeare remarks, and not without reason:

"The man that hath no music in himself,
Nor is not moved with concord of sweet sounds,
Is fit for treasons, stratagems, and spoils;
Let no such man be trusted."

§ 75. MORAL FEELINGS.

Man arrives at a knowledge of good and evil through the reason. Either the one or the other may lead to feelings which are called moral feelings.

The source of these feelings is the harmony or lack of harmony of the will with its ideals. When we become conscious of a will which answers to its ideal; *i. e.*, is constituted as it should be, we announce an approval which manifests itself as a moral feeling of pleasure. Where, on the contrary, acts of will are perceived which are contrary to the moral ideals, this contradiction makes itself felt as a moral feeling of pain.

This harmony or discord with moral laws may be observed in others as well as in ourselves. We may distinguish, therefore,—

THE MORAL FEELING

a) Of moral harmony. { 1. In our own will. 2. In the will of another.

b) Of moral discord. { 3. In our own will. 4. In the will of another.

The feeling indicated in subdivision 1 flows forth as moral peace of mind from the approving conscience of the man of character; whereas that indicated in 3 is the gnawing of conscience, which may become tormenting self-condemnation and despair. The feelings indicated in 2 and 4 appear as moral admiration or moral indignation where we come upon moral greatness or moral meanness, upon noble deeds or shameful ones, whether in life or in poetry. (Drama, epic poem. Bürger's "Song of the Brave Man"—"Lied vom braven Mann.")

The moral feelings are, therefore, nothing more than pleasure in the good and pain in the bad, the preference of the former and the rejection of the latter. They are the feelings by which the eternal and unquenchable demands of conscience appeal to our minds.

It is of the greatest consequence for the moral condition of man that he should not remain indifferent to the good and the bad, but that he render his mind sensitive to moral feelings. This sensibility, upon which tenderness of conscience depends, is best supported by the contemplation of noble moral characters, which bring the moral ideas before us in embodied form, and compel our souls to moral approval. [1]

1) Art, which appeals to the senses, is more effective than abstract conceptions. The significance of (true) theatrical art for the development of moral feelings is not highly enough prized. Here the good and bad characters act directly before our eyes, and excite us to moral admiration or moral indignation. Compare Schiller's excellent monograph, "The Stage Regarded as a Moral Institution." "Die Schaubühne als Moralische Anstalt."

Remark 1.—The good is distinguished from the beautiful in that the object of æsthetic judgment in the latter is an external and more or less indifferent one (as, *e. g.*, colors, stones, tones, words); whereas with the good this object is the will of man, *i. e.*, the man himself. While, therefore, the representation of the beautiful in the various arts can not in general become a duty, no one can escape the duty of representing the moral ideas in his will and action. When one, for instance, is a poor piano player, or an indifferent poet, he can ward off the condemning judgment regarding his artistic actions by the remark that he plays or writes for himself and that he could abandon these amusements; but when he is a bad man, he must suffer others to break the rod of judgment over him and pay him the tribute of contempt. For this reason the good is infinitely higher than the beautiful, though in other respects intimately connected with it.

Remark 2.—The moral feeling which is originally a simple approval of the good, and condemnation of the bad, may, under different circumstances, assume different forms. It manifests itself as esteem or contempt in the case of the moral or immoral actions of others; as a feeling of justice where we have to do with established rights; as a feeling of honor where we have to do with the judgment of others regarding our moral actions; as shame and remorse where we must pronounce judgment against ourselves; as thankfulness or gratitude where we seek to recompense the good deeds received from others, etc.

§ 76. RELIGIOUS FEELINGS.

Closely related to the moral, are the religious feelings. By religious feelings we mean such as have their seat in man's ideas of a supersensible world, whose center is God.

Man very soon discovers (particularly in destructive catastrophes, in the tumult of the elements, upon the stormy sea, in danger, etc.) his own impotence and dependence upon higher powers. He sees that the magnitude and splendor of creation, the significant adjustments of nature, the undeniable foresight in the chain of events, presuppose a wise ruler; and finally that the undeniable validity of moral demands

points to a highest moral (holy) originator of the moral law. Man is led through these observations to a knowledge of a highest being.

The concepts of God and a future world become the source of manifold feelings. Reverence, gratitude, love to God, are religious feelings, which find their expression in divine veneration and in religious exercises, especially in prayer, which is conversation with God.

These feelings are very important, for they bring wonderful consolation to man in the vicissitudes of life, and lift his spirit above this world of sense. But they attain their greatest importance in that they are the most important support of morals, since they make the moral law, which would otherwise be a mere demand of the reason, appear as an expression of the divine will, and requite its obedience or disobedience with rewards and punishments.

Remark 1.—All the events and relations of the earthly life appear in a more beautiful light when they are viewed from the standpoint of religion. The existence of man does not end with the physical death, but really only begins then; the virtue here rejected and trodden into the mire will triumph in the hereafter; the evil here holding its head aloft in the chariot of victory will there find its destroyer; the hypocrite will be exposed; the righteous man will be lifted up; there will reign peace, harmony, blessedness. It is in these reflections that the marvelous consolations of religion consist.

Remark 2.—The careful contemplation of nature greatly furthers the belief in God and the religious feelings. The eternal order in the economy of nature; the profound plan, scarcely attainable by human reason, which extends throughout all the processes of nature; the marvelous intertwining of individual phenomena in order to reach a highest end—all this gives more than a guaranty for the existence of a supreme ruler of the universe. Therefore the greatest naturalists have been the most pious men. It is said of Newton, the man who has looked deepest into the order of the universe, that he never could hear the name of God spoken without uncovering his head.

§ 77. PERSONAL, OR EGOISTIC FEELING.

The object of personal feeling is our own ego. In the course of our mental life it experiences furtherance and depression, upon which the exaltation or depression of the egoistic feeling rests. I am affirmed, *e. g.*, in acknowledgment, praise, honor,—this leads to exaltation; everything whereby our ego is negated, as, *e. g.*, blame, contempt, ridicule, unsuccessful results, violence, and limitation of every kind, leads to a depression of our egoistic feeling.

The ego is man's strongest concept mass, for it is reinforced by the total complex of concepts. But in its outwardly directed activity it soon comes upon difficulties and boundaries beyond which it can not go. These obstructions are either the blind powers of nature or the conscious activity of other men.

In so far as the ego is able to surmount these difficulties, to overcome these limitations, it feels itself greater, more powerful, less limited. The furtherance of the ego concept through the surmounting of outward hindrances gives rise to the egoistic feeling. The more complete this victory is, the more intense will the feeling be.

Even the child shows pleasure in such activities as enable him to realize the superiority of his own personality over the external world, to make his own ego valid against external forces, therefore the child's joy in the destruction of outer objects, therefore the pleasure in playing with lifeless things, in altering them at pleasure, and in making his playfellows subject to himself; *i. e.*, dependent upon his own personality.

But the adult also feels the need of asserting his own ego in word and deed; the rude impulse to destroy, which is met with in children and savages, is with him transformed into the nobler impulses of construction and art, whereby, instead of destroying, he creates new forms; the crude desire

to rule is changed into obedience to law, which makes true freedom first possible. The egoistic feeling of man, which at first threatened to degenerate all things external in the over-valuation of self, is now brought back to its proper limits.

This is particularly the case when the individual feeling of self is widened and ennobled by being extended to social feeling. Man finds himself in society, in which he stands in the relation of a fraction to the whole. He is not himself the middle-point of society; this he must rather yield to the political, religious, and social leaders, as well as to the highest and best; but in thought he approaches as closely as possible to this middle point, and feels himself infinitely exalted, in that he participates in the power and greatness of the social whole, thus striking off the limitation, the imperfection, and the transientness of the individual. (See Author's Psychology of Society, § 24.)

The social feeling of self is the feeling of honor, which rests upon the acknowledgment of our own worth by society, and is therefore furthered by everything which can exalt the idea of our own personality in the eyes of society. Man instinctively undertakes everything in order to hold the idea of his own personality high in the social consciousness; *i. e.*, to promote his honor, and when it is attacked, to rescue it. [1] The sudden and irresistible check of the self-consciousness is manifested in the feeling of shame.

Remark 1.—There is also a false feeling of self, which has its seat, not in actual experience regarding the validity of the ego, but in imaginary views regarding its assumed value. In order to protect man from this false feeling of self, which can only be harmful in life, it is important that he be early accustomed to obedience. This is nothing more than the subordination of the ego under a higher power. It is also the most important exercise for the youthful being in a moral regard. The feeling of self when it does not degenerate

1) The thought of not being able to live without honor lies at the basis of the duel, in its higher apprehension.

to selfishness is a noble moral feeling, for it protects man from every humiliation.

Remark 2.—Upon this suppression of the egoistic feeling rests one of the most painful of feelings, namely, the fear of death. Egoistic feeling is never so much opposed as by the thought that there may be a condition in which the ego will no more exist. This weight upon the ego-concept is the source of the fear of death, which can only be banished by the argument that the ego need not fear a state in which it no longer exists. It is not the idea of some expected evil, but the thought of nothingness that causes the anxiety in the fear of death. Therefore the ego demands unlimited continuance, and finds its comfort in the belief in immortality.

§ 78. SYMPATHY.

While the egoistic feeling threatens to insulate man, that of sympathy attracts him to other beings of his own kind. The physiognomy is capable of expressing human feelings in mien and gesture. Pleasure and pain are revealed in the radiant or the clouded eye, in the erect or drooping position of the body, in the expression of the face, and in the speech. One can therefore judge from the exterior of man what feelings move him from within.

If in this manner we perceive the feelings of another, we can not long remain entirely indifferent to them; we put ourselves in the place of the other ego, and since we bring to consciousness the concepts upon which his feelings rest, we make his feelings our own; *i. e.*, we sympathize, or feel with him. Sympathy is accordingly that feeling which arises through the perception of feeling in another, and which is similar in tone to the feeling observed. According as the feeling was pleasure or pain, our sympathy is joy in his fortune, or commiseration for his misfortune.

The going out of the ego in sympathetic feeling is most active where the similarity of concepts brings about a com-

mon consciousness, a "we," because under such circumstances one can most easily think himself into the state of the foreign ego. We sympathize, therefore, most easily with such persons as are most like ourselves in mental condition; as, with relatives, associates of the same age, countrymen, etc.

But with sympathy there is involuntarily mixed the reflection upon our own condition, which obtrudes itself more or less, thus causing sympathy to become a mixed feeling, since with pity is associated the joy at our own more fortunate state, and with the joy in another's happiness, the sadness of our less happy condition. Should these accompanying feelings come into the foreground, they may even quench the sympathy and become transformed into an opposing feeling, or antipathy. This occurs when, upon perceiving feeling in another, we are thrown into a feeling the opposite of that perceived; as when, for instance, another's joy saddens us, or his pain pleases us. In the first case envy, the opposite of pleasure in another's good fortune, arises; in the second, pleasure in another's misfortune, or the opposite of pity.

Sympathy is important because it builds the bridge to benevolence and love, which are the center of gravity for the moral ideas. Antipathy, though not always to be condemned (who does not rejoice when a hypocrite stands revealed in his contemptibleness?), is on the whole a dangerous state for morality, since it may easily lead to ill-will and hate.

We must distinguish between these feelings and those of involuntary sympathy and antipathy; *i. e.*, the unconscious attraction or repulsion in regard to living or lifeless things. We feel sympathy or antipathy regarding men whom we see for the first time, or parrots and apes, or landscapes and cities, without being able to explain precisely why. (Antipathy of women for spiders and preference for cats.) These feelings rest upon obscure concepts which are associated with

the idea of the respective objects, and which cause in us a feeling of pleasure or pain.[1]

Remark 1.—Pity is more met with in life than sympathy of a joyous nature. We sympathize rather with the man whose property is destroyed by fire, and whom we see before us in his desperate circumstances, than with him who has won the grand prize in a lottery, and who now rejoices at his good luck. Sympathy with the good fortune of others is a sign of a noble nature, which is above vulgar envy and selfish desires, just as pleasure in the misfortune of others is a sign of a deeply corrupted heart. For this reason love of destruction must not be suffered in the heart of the child, must not be permitted to grow with his growth. Children who manifest a pleasure in tearing off the wings and legs of bugs and butterflies, knowing that they are causing pain, show already an evil heart. What in a small way they do with helpless animals, they will in a greater do with men when they have strength and opportunity. Envy is not so bad as the love of injury to others; for it finds some excuse in the reflection upon the personal, perhaps less happy state, and may prove a spur to improvement through increased activity. Therefore those are most envied by us who in regard to external circumstances are most our equals, because this equality excites comparison and contrast. A beggar envies another beggar who has been more lucky in begging, rather than a prince. The latter appears to him as a being of a higher order.

Remark 2.—Sympathy leads very easily to love. By this general term we mean that feeling which devotes itself to another personality and finds its own true expression in the greatest possible union with the other personality. Love seeks to approach the beloved object as nearly as possible, to identify itself with it, and to fill up the gulf which lies between me and thee. It fuses the individuals into a unity of existence, and, as far as possible, annihilates the distance which separates them. It may have various motives, in accordance with which it assumes specific forms (friendship, love of children, love between the sexes), and has a varying moral worth. It reaches its highest moral worth when it renounces every selfish motive and devotes itself to mankind as universal love of man (brotherly love).

1) Perhaps that man who excites our sympathy has a feature in his face which reminds us dimly of some beloved person; perhaps that valley which touches a sympathetic chord has a similarity to the fields of our home neighborhood.

This is the genuine love which Christianity places at the front of morals, which is active wherever opportunity offers, and which excludes nobody, not even an enemy. Christ, who mingled with all men, with love to the good and the bad, who died for all mankind upon the cross, praying for his enemies, is the sublimest archetype of Christian love.

§ 79. RECIPROCAL ACTION OF FEELINGS.

Just as the unity of consciousness brings about a fusion of simultaneous concepts, so the unity of feeling brings about the conjunction of all feelings occurring at the same moment of life. The resultant of these simultaneous feelings manifests itself in the mind's general state of feeling.

This general state of feeling is synthesized from numberless elementary feelings, which in the main rest upon obscure concepts, which taken individually are too weak to become noticeable. The tone of these elementary feelings passes over into the tone of the general state of feeling, which thus becomes a disposition to feelings of pleasure or pain.

The feeling of life and the products of the vital sense form the dark background of our momentary state of feeling. Herewith are associated the minor movements of feeling, which, in accordance with the events of the day, affect us, now as depressing, now as enlivening, and become noticeable only in their totality as good or bad humor, as joyousness or as sadness.[1]

1) An analysis of these obscure and in themselves very insignificant elementary feelings by introspection is hardly possible, and we are often utterly unable to ascribe a cause to our joyous or depressed state of feeling. The most insignificant incidents of the day are not without their influence upon it. On a foggy morning an Englishman, on account of depression of spirits, thought to commit suicide. He had already placed the pistol to his head, when the clouds parted and the sun shone. His depression was scattered with the breaking of the clouds, and the thought of suicide was postponed.

From this obscure complex of feelings, characterized only by tone, only those feelings arise as special states which have their seat in clear concepts or in detached groups of concepts. But even these feelings are much influenced by the tone of the ruling state of mind.

On account of the coming together of these species of special feelings there not unfrequently arise augmentations and contrasts of feeling, according as these harmonize in tone or not. The pleasure arising from a well-spread table may be much augmented by the satisfaction of happily completed deeds, successfully passed examinations, by a gay holiday mood, or by the relation to some purpose satisfactory to us (festivities), or by the presence of similarly minded companions (banquets, etc.[1]); on the other hand, the pleasure may be greatly dampened by anxiety regarding contemplated labor or undertakings, or by the presence of persons who are disagreeable to us. A good conscience, because in itself the source of the purest pleasure, augments every joy, whereas the consciousness of guilt spoils every pleasure.

Here, also, belong the "mixed feelings." Nothing is commoner than that a certain change in the state of our feelings should augment on the one side the arrest, on the other the furthering of concepts, thus at the same time producing feelings of pleasure and pain. Every surprise brings about a mixed feeling. A strong and lasting mixed feeling is called melancholy.

So far as they are opposite in content, feelings may arrest each other, in that the concepts in which they have their seat are arrested. As there is a concentration of con-

1) The common attempt to increase this pleasure by table music seems less happy; unless indeed an appropriate kind of music should be invented. The pleasure in tones and the satisfaction of the palate belong to entirely different departments.

sciousness, so there is a concentration of feeling (heart), in accordance with which the intensity, and, indeed, the duration of feelings decreases with their number, their manifoldness, and their opposition in kind. Thus, cosmopolitanism stands opposed to patriotism. He who is enthusiastic for many and different things is superficial and transient in his enthusiasms.

Remark 1.—The general state of feeling is not constant; it is rather changeable according as the numberless psychical components upon which it depends change. Since its average tone must be one either of pleasure or pain, this must be determined by the prominent elements of feeling found in it. If, for instance, depression of feeling has occurred, it extends over the whole state of sensibility; even the fly upon the wall offends him who is already vexed—the whole concept life is drawn into the unhappy state. Therefore, the first impressions which one receives in the morning or upon entrance into strange society are often the decisive ones, and the first tone sounds through the whole day or the whole conversation. Yet the opposite often takes place; the one state of feeling gives way to the opposite If this becomes habitual and involuntary, it is characterized as humor. This is often a consequence of somatic disturbance (biliousness, hypochondria, hysteria).

Remark 2.—The predominance of the obscure state of feeling over clear consciousness is called humor. The frame of mind may be joyous or sad, exalted or depressed. An exalted state of mind presupposes a certain physical well being, and the presence of significant masses of concepts in the mind. This is the state in which all great deeds are executed, all art work created and enjoyed.

§ 80. VIOLENT FEELINGS, OR PASSIONS.

Passion in the narrower sense, or violent feeling, is the exact opposite of peace of mind.[1]

1) With the exception of profound sleep, there never is absolute quietness of feeling. That which we call such is only a middle state in the tension of our concepts, in which they approach an equipoise as nearly as possible through their reciprocal fusions and arrests.

The momentary equipoise of the concepts is constantly disturbed by the feelings, in the sense of over or under tension of furthering or arrest, even though the peace of mind be not thereby destroyed; for, the tension of concepts, no matter how far carried, may be released in purely psychological ways. In truth, experience shows that the most intense feelings, which have their root in the depths of the soul and are interwoven with the most diverse concepts—love for one's native land, attachment to those near and dear, religious worship, and poetic inspiration—are in fact far removed from really violent feelings, or passions.

These violent disturbances arise only when concepts in a state of equipoise receive such an impulse to rise or sink in intensity, through the sudden and unexpected entrance of a concept, usually a sense-perception, that the former equipoise suffers a sudden and violent disturbance, and more concepts are thrust into or out of consciousness than would occur in a quiet development, and more than answer to a balanced state of mind. The suddenness and tumultuousness of this action does not give the ego concept time enough to appear and to make its apperceiving influence valid; *i. e.*, to restore the equilibrium. In passion, for example, anger, man is not himself, but *beside himself*—he is impelled to words and deeds in which he would not recognize himself when his balance of mind is restored (man does not know himself in anger).

The sudden mounting or sinking of concepts bears with it a corresponding modification in physiological resonance; that is, in accompanying conditions of the nervous system. This appears as excitation or depression of nerve activity, at first in the central portions of the cerebro-spinal system, then in the nerve fibers which lead from it, and is reflected finally in the nerves and systems of the vegetative spheres; therefore the remarkable bodily phenomena which accom-

pany the passions, and which manifest themselves in the sudden tension or relaxation of the muscles (doubling the fists, cramp, trembling, temporary paralysis), in the altered circulation of blood (blushing, paling, heart paralysis), secretion or discharge (of gall, saliva, tears), and respiration (the snorting expiration of breath by the angry, and the arresting of the breath with the terrified).

This sudden disturbance of the nervous system exercises a very significant reflex action upon the condition of the mind itself. The intensified or depressed state of excitation in the physical masses of the nervous system, in accordance with the faculty of continuance, may prevent an immediate return to a normal middle activity, and thus prevent the return of the highly-strung concepts to their condition of equipoise. Passion must wear itself out; only when the excitation in the nervous conditions has gradually calmed can the mind return to its normal state of equipoise. Thus, in the condition of violent feeling, the body, temporarily indeed, brings the mind under its dominion and robs it of its free self-determination. On this account the passions are connected with the temperaments, of which the choleric does most to produce violent states of feeling, and the phlegmatic least. Education, culture, helps to subdue passion, since it brings about an even, inner fusion of our concepts.

In accordance with the foregoing, one may define passion in the narrow sense as a sudden and violent disturbance of the equipoise of concepts, which, in consequence of an unexpected invasion, is brought about by the assistance of physiological causes, and associated with violent excitations of mind.

Remark 1.—Every feeling may increase until it has this violent nature as soon as, on account of increased physiological resonance or of the stronger physiological pressure, reflection is lost. Even the noblest feelings of man are capable of this degradation; as, for

example, the feelings of right and morality. The feeling of requital when outraged by tardy or insufficient justice easily increases among the people to the violent stage, and breaks out in dreadful deeds of lynch-law, just as the noble feeling of patriotism is often intensified into revolutionary insanity.

Remark 2.—The physiological disturbance of the nervous system is at first an effect of the passion, but may itself also become a strengthening cause of it. "Thus, passion first agitates the body; but the agitation is continued in the body, and in turn does not at once allow the mind to regain its natural condition and activity." In this way the lower kinds of passion may be excited by the body; he who frowns or doubles his fist after the manner of an angry man, actually becomes angry, and, "The hand which smooths the frowning brow appeases also the anger expressed by it." (Lotze.) In this way the dampening of passion in a purely physiological manner is explained. A glass of water for the agitated, a glass of wine for the despondent, may serve a good purpose. Even to take a seat may have an effect, and Kant recommends as a counter argument, the offering of a chair to one who enters our room in order to use hard words against us. If the angry person sits, the relaxation of the muscles begins the relaxation of the tension of the mind,

Remark 3.—Even the slightest external occasions may break up the equipoise of the mind when it does not rest upon reliable apperceiving concepts, or even when an unexpected incident catches us off our guard. There are men who bear with fortitude the hardest blows of fate, but who are beside themselves if in an unlucky moment a button comes off or a fly lights on the nose.

§ 81. CLASSIFICATION OF THE PASSIONS.

The subdivision of the passions corresponds to that of the feelings. The deviation of the concepts from a state of equipoise may be in consequence of an intensifying or of a depression of concepts. In the first case, we find a powerful releasing and acceleration of the movement of concepts, accompanied by an overfilling of the consciousness and a

heightened feeling of power—in the latter case, by a powerful checking or arrest of the flow of representation, together with a prevailing emptiness of consciousness and a feeling of helplessness. In the first case, the violent agitation of the mind is like mountainous billows; in the latter, like the valleys between them.

The reflex action in the two cases will also be an opposite one. In the first, an augmentation; in the second, a depression of the nerve activity will occur. Agitations of the first sort are called *active;* of the second, *passive.*

Anger is the representative of the active passions, fear of the passive. Anger, which arises mainly in consequence of offended egoistic feeling in consequence of injury done, brings a flood of concepts over the threshold of consciousness, which in their lawless thronging rob the man of reflection, some concepts being rapidly raised to the highest degree of intensity, so that the volitions and actions which follow from them assume the character of an irresistible tide of feeling. With fear, on the contrary, there is a sudden ebbing of concepts, in that a single concept mass excessively intensified (that of the event feared) causes a general sinking of concepts, so that the resulting vacancy of mind expresses itself externally in silence, trembling, indecision, and inactivity.

These mental agitations have, further, their outbreak, their culmination, and their decline and termination. The last is effected in that the displaced ego concept gradually comes again to validity, apperceiving the concepts aroused on account of the agitated state. The given classification relates to the state of the mind when the agitation is at its culmination.

In conclusion, we may find place for the classification offered by Prof. Nahlowsky:—

A. *Active, or Plus Side.*	B. *Passive, or Minus Side.*
Pleasant surprise.	Overpowering astonishment.
Sudden enlivening.	Predicament, confusion, sudden loss of good humor.
Gayety.	Painful surprise.
Abandon.	Attacks of care and sadness.
Excessive joy.	Anxiety.
Entrancement.	Depression.
Courage.	Lack of courage.
Anger.	Shame.
Vexation, resentment, enmity.	Fear.
Admiration.	Terror.
Inspiration.	Abhorrence.
Ecstasy.	Amazement, horror.
	Remorse.
	Despair.

PART III.

STRIVING, OR IMPULSE TO ACTION.

CHAPTER I.

§ 82. DESIRE.

Desire is in general a state of mind which strives to bring about some other state not now present. It is always directed toward some particular object; but only the idea of the object, not the object itself, can penetrate to consciousness; for instance, not the gold, but the idea of its undisturbed possession; not the water, but the sensation of a satisfied thirst.

But the idea of the desired object was already in consciousness when desired. He who does not know the quenching quality of water or who cannot imagine the pleasure of its possession would never desire it. Before possession the concept is arrested; afterwards it is freed from arrest.

Impulse strives, therefore, to shake off the undesirable state of arrest from the idea of the desired object, and to exchange this state for that of freedom from arrest in order to be complete master of its object so far as can be through the medium of concepts. This is brought about by a struggle against the opposing, arresting concepts, and by elevating the concept of the desired object higher and higher above the threshold of consciousness. The necessary power to do

this is lent by the subordinate helping concepts which impel to desire, and which are, therefore, motives of desire.

Concepts which are under the influence of impulse we call desires. [1]

In desire, as in feeling, we distinguish: 1) the concept of the desired object = A, 2) the sum of the opposing concepts = M, and 3) the sum of the furthering or assisting concepts = N. But desire differs from feeling, in that it is not, like the latter, a momentary stage of mental activity, but is a transition through several such stages; *i. e.*, it signifies a movement. The several cross sections of this movement are mixed feelings, because now the intensifying of the chief concept, A, now the vain struggle against its opposites, M, comes to consciousness. The energy of desire will depend upon the force developed by the furthering concepts, N, and can be measured by the resistance of the opposing concepts, M. If these assisting concepts are sense-perceptions, whose power is continuously renewed by prolonged sense impression,—if they are sensations which have their root in determinate physiological relations,—if they are series which cross in the concept, A, and, in the effort to develop or run off, bring it more definitely to consciousness, then the desire may assume an extraordinary degree of intensity and manifest itself as demand or longing. Negative desire, as the sinking of a concept before its opponents, is abhorrence or detestation.

§ 83. SATISFACTION OF DESIRES.

A desire is satisfied when the chief concept, A, has reached the highest degree of clearness of which it is capable.

1) Strictly speaking, every concept strives for freedom from arrest, as its natural condition. But the effect of this striving is counteracted by the action of opposing concepts; it is just as if the impulse did not exist. Impulse is first called desire when its effect is manifested by the elevation of a concept to ever higher degrees of clearness, through the support of numerous attendant concepts, until it momentarily occupies our whole consciousness.

This moment is subjectively recognized as an intense feeling of pleasure, for the opposing concepts, which have been so long struggled against in vain, appear permanently overcome.

Such a satisfaction can in general only be obtained when the reproduced concept, *i. e.*, the concept held by imagination before the mind, becomes a sense-perception; for so long as it remains mere concept in the narrow sense (§ 13), it must, in the contest with its opposing concepts, suffer participation in their arrest. Only when it becomes a sense-perception can it (according to § 44) totally free itself from arrest.

Experience completely establishes this fact.

Homesickness, for example, can be wholly cured only by actually going home and allowing the beloved spot to affect the senses[1]).

It is otherwise with the intellectual desires; their aim is not an object of sense, but a certain rearrangement of concepts, as in the solution of a problem. Here the satisfaction consists in concentrating the whole power of attention upon one group of concepts, so that consciousness is confined within one limited field of thought, thus greatly increasing the clearness of the same. Thus, by means of intellectual desire, the attention is directed now upon this, now upon that point of consciousness, and the course of thought is correspondingly governed.

1) There is indeed a kind of artificial satisfaction for sensuous desire, independent of the senses, since one by voluntarily directing the inner attention may seek to raise the concept of the desired object to the highest degree of clearness, and to drive all opposing concepts from consciousness. Longing, or ardent desire, seeks this mode of satisfaction by forcibly disengaging itself from the impressions of immediate sense, and by yielding itself to the remembrances of the absent object. Although in this way there may be found a species of satisfaction, yet it can never be so complete, so enduring, so free from care as that furnished by the senses. There is rather a constant oscillation between the full desire and the partial satisfaction, a condition of the soul which in the case of longing, that sweet pain, sickens man and blanches his cheeks.

Desire is quenched in satisfaction. But it may appear again as soon as the never failing opposing concepts press into consciousness in consequence of relaxing sense excitation or failing attention, and the concept of the desired object is thrown from its state of freedom back into that of struggle. If this is the case, the way is opened for a new satisfaction, and this play between desire and satisfaction may continue active for a long time. This play is especially engrossing when its single acts pass over into one another in accordance with a certain rhythmical alternation. It is in this that the entertainment of play and the arts requiring time for their execution (the dance, gymnastics, theater, music) consist, whereas plastic arts and architecture in their unchangeableness have an element of earnestness. Labor is also broken by a like rhythmical change of desire and satisfaction.

Remark 1.—The more completely and exclusively the concept mass concerning the desired object occupies our consciousness, and the more completely the tension of the desire is relieved, the more perfect is the satisfaction. Such a complete satisfaction is almost exclusively peculiar to sensuous desires, because they are simplest in their content, and their satisfaction is most easily brought about. With desires not sensuous, the greater the field of thought to which they relate, the more incomplete is the satisfaction, for with the magnitude of this field the difficulty of an all-sided release of the many tensions increases. In general, the richer the concept life of man, the more difficult does the task become to satisfy fully the desires which arise with the growing activity of the concepts, and the wealth of their relations. Therefore, the satisfaction of the desires of the animal, the child, and the untutored savage, is probably much easier than with the cultured man.[1]

Remark 2.—Desire and satisfaction are related as expectation and realization. Just as expectation idealizes its object through the activ-

1) Every desire arises either from a sensuous or an intellectual need. The wealth of desires increases with the number of needs. The more the spiritual, social, and economic life of man becomes complicated, the more do his needs and desires increase, and the more difficult does it become to satisfy them. Compare the author's "Problem of Happiness"—"*Problem des Glücks*," Chap. III.

ity of the imagination, so that the fulfillment is not equal to the expectation, so there are connected with the satisfaction of desires the numerous well-known cases in which the mind is disabused of its erroneous notions. The inhabitant of the city wants to get into the country, the countryman seeks the city; but when the change is made, both find their expectations only partially realized.

§ 84. RELATION OF STRIVING TO THINKING AND FEELING.

Like feeling, desire also has its seat in a concept mass. There is no more an isolated faculty of desire than there is a faculty of feeling; desire is, rather, only a form of reciprocal action among the concepts.

Desire is in contrast with feeling, since it has an independent content of its own, whereas feeling is mostly hidden in obscurity. In the concept of the desired object, desire has a middle point, which is lacking in feeling; for we must know what we desire. *Ignoti nulla cupido.* Therefore, though there are vague feelings, there are no vague desires.[1)]

Yet desires and feelings are closely related and each often passes into the other, since the increase and decrease, that is, the movement, of impulse is not conceivable without the tension of feeling; and, on the other hand, the tension of concepts could not exist without a movement among them. Hope, love, friendship, homesickness, patriotism, are mental states which are characterized alike by desire and feeling.

In general, however, feeling is a statical, desire a dynamical act; in feeling, a concept mass is found in equipoise, arising through reciprocal tension among its parts—in desire, a single concept releases itself from all others, to be either exalted or suppressed by them; in the first case the subjective state of consciousness may remain as it is, since joy and

1) Perhaps we may class with vague desires, such coveted privileges as rest upon very obscure concepts of the things desired; for example, the longing of young people to smoke.

pain are passively experienced; in the second, the present state of consciousness is to be broken up in order actively to pass into another state.

Out of the feeling of pain desire is naturally developed as soon as the mental act has reached a certain degree of clearness, and the arrest of subordinated concept masses is strong enough to offer serious resistance. When one knows what the object of discomfort and pain is, it is natural that he should strive to set it aside. He who is afflicted with homesickness desires to return home; the sick man desires health; the prisoner, freedom. Renunciation and prohibition cause a certain uncomfortable state within us, on account of the pressure they exert upon our ordinary concepts, out of which we seek to emerge by desire of the forbidden object (*nitimur in vetium*).

Desires, therefore, share with feelings all the exigencies of the course of representation. But one may more correctly speak of a reproduction, a memory and imagination, of desire, than of feeling; for, desires depend upon a specific content of thought, and return therefore as often as in company with their associated concepts they appear in consciousness. But as the intensity of the helping concepts decreases with time, so, also, the energy of desire will diminish; thus desires, like feelings, lose intensity with the flight of time. If, finally, the furthering concepts become obscured, desire sinks to indifference ("out of sight, out of mind"); desire may even pass over into its opposite, should the opposing prevail over the furthering concepts. Love for an object may, in this way, become hate, after illusion has been destroyed by an experience which corrects the view.

Remark 1.—The more our consciousness stands under the influence of immediate sensuousness, and the less through lack of psychological culture we pay attention to direct relations among the concepts themselves, the more is the mind opened to the excitements

caused by desire, and the more does it take on a striving character. The child desires all that it sees, and the uncultured man is noted for his stormy greediness; the educated man, on the other hand, knows how to govern his desires, and the stoic philosopher repelled desire and its creating need with logical consistency. [1] We must not confuse this suppression of desire with the modern *blasé* state, which rests upon mental and physical decadence and is related rather to the phlegmatic condition of age.

Remark 2.—The frequent reproduction of a desire may greatly increase its strength. In that the concept of the desired object strives against its opposing concepts in consciousness, it frees the former obscured concept of the same object by immediate reproduction, whereby the total power of impulse is greatly strengthened, especially when the former desires have been associated with satisfaction, because satisfaction implies an overcoming of opposition. In this way desires may grow into settled inclination and proneness.

Remark 3.—Desire surrounds the coveted object with a certain interest, and lends it a worth which differs for different persons and times according to the relativity of the desire. The thirsty desire water; the hungry, food; the bored, entertainment; the tired, rest; the investigator desires the truth; the miserly, money; the imprisoned, freedom. Within the circle of desire there are gradually drawn, not only objects in themselves worthy of desire, but also others which though having no such worthiness in themselves, acquire a certain utilitarian value as means for satisfying other desires. Thus desire embraces not only ends, but also means; not only the beautiful and good, but also the useful; not only the agreeable, but also the disagreeable, in so far as it serves as a means for the acquirement of a greater pleasure.

§ 85. THE INTERACTION OF DESIRES.

The interaction of desires is given with that of concepts. Desires further or assist one another when they are all

1) The stoical suppression of desire as well as the subduing of desires and impulses so popular in the middle ages shoots above the mark, for with desire they threaten to eradicate will, and with this the true substrate of morality. Not the suppression but the government of desire is what morality demands of us. The enfeebled energy of desire and will are morally to be disapproved.

directed toward the same object or toward similar objects; they hinder or arrest each other when directed toward mutually excluding objects. Thus, religious impulse is closely related to moral impulse, and the two mutually further each other; love of native land is not at all in the way of its reform, and both may find their satisfaction in the same projects and deeds. On the other hand, effort toward scientific progress is not compatible with the quest after sensuous dissipation (card playing, drinking, etc.), and the two mutually injure each other.

The united nature of the mind appears also in the case of desire. Our efforts are the more energetic and persistent the more they are directed to one end, with the exclusion of all others, and the less they are dissipated by multiplicity and contradiction. Pedagogics and psychology should have regard to this fact, so that they shall not dissipate and cripple the mental power of man by setting up too many ends of effort.[1] Wherever there has been a great work to do, it has been accomplished by concentration of effort. (Columbus. The principle of division of labor in economic society.)

Remark 1.—Things are arranged most favorably, not only for the outer result, but for the mental and spiritual state of man, when all efforts, like rays of light, radiate from a central point, and are again related back to it. This is not easy, however, with the multitude of excitations from within and from without, and presupposes a reciprocal comparison and valuation. Understanding and reason, prudence and morality come in here.

Remark 2.—A conflict in desire arises when one and the same object is in one respect desired and in another detested. This is pos-

1) The pedagogics of the present is in danger of making the efforts of the pupil superficial by dissipation. Not only the external result, but also the formation of character suffers, if the attention is simultaneously directed to too many things (Language, Music, Drawing, Gymnastics, Dancing, Stenography, and other arts). Unfortunately the times already make too many demands upon the individual in this respect.

sible when two separate fields of thought, M and N, come into consciousness as opposing forces, whereby one of them, M, seeks to place the concept L in a state of augmentation, while the other, N, seeks to place it into a condition of opposition, or sinking. The final result of this contest will depend upon which of the lines of thought is temporarily able to displace the other. Sense and reason form two great departments of thought, which, in certain cases of desire, may appear in consciousness as opposed. But also within one and the same sphere of thought such interests and considerations may arise as to bring about a conflict of desire; in the sphere of sense, when the agreeable and the disagreeable of different sorts (chirurgical operations) struggle with each other; in the sphere of morality, when different moral ideas, as, for example, when justice and mercy collide. That such conflicts can not occur without a lively agitation of the mind, and without accompanying feelings of pain, is a matter of course.

CHAPTER II.

THE PARTICULAR FORMS OF DESIRE.

§ 86. CLASSIFICATION OF DESIRES.

We may distinguish the following points in regard to a desire: 1) its content, or the concept of the desired object; 2) its impulse, or motive, as complex of the furthering concepts which bring the concept of the desired object into a state of striving, or impulse; 3) its strength; and 4) its duration. According to content, a desire is either sensuous or spiritual. (Compare § 83.) Desire for water is sensuous; that for the solution of a problem, for the determination of a historical name or date, for the discovery of the truth,—in general, for spiritual ends, is a spiritual desire.

The motive of a desire may lie in an uncontrolled play of representation or in the understanding or in the reason. Upon this fact depends the threefold division of desire into desire proper, will, and self-determination.

Will, as desire guided by understanding, is directed by ideas as to the attainability of the object desired, whereby a judgment from the side of the understanding is necessary. We find here not only the ends desired, but also the means which lead to it, no matter whether they are worthy of desire or not. The majority of the things for which man strives, possessions, riches, business, and so following, are only means for reaching higher ends. By the addition of judgment as to the attainability of that desired, *desire becomes will.*

Finally, however, judgment must turn from the means to the ends as such, and raise the question, What in itself,

without regard to anything else, is worthy of desire? This question presupposes a rational reflection. Man is free in his action when in a state of reflection, because he then hits upon a choice among several offered directions of will. *Rational desire is therefore free volition, resting upon reflection and self-determination.*

Another standpoint for a more graduated subdivision is found in the combined relations of the strength and duration of desires. According to duration, desires may be divided into transitory and habitual (enduring). For the strength of desires there is a fixed point in the rising scale where the desire ceases to be capable of apperception. Beneath this point lie the desires which are still under our control, above are the passionate desires; in the former case we control the desires; in the latter, they control us. In accordance with their idea, the passionate desires belong to the enduring class; to which also belong instinct and inclination.

By the combination of these subdivisions we arrive at the following scheme:—

DESIRES:

Transitory:	*Habitual:*
A. The desires proper.	
Sensuous desires.	Inclination, propensity, Instinct, } apperceivable.
Intellectual desires.	Passionate desire, not apperceivable.
B. The Will.	
External will. Action and deed.	Habits of will.
Internal will. Voluntary attention.	Principles of will.
C. Self-Determination.	
The single act of self-determination.	Character.

§ 87. IMPULSE.

Impulse is a permanent natural disposition of man giving rise to desires (or detestations) which are fixed as to kind, but not as to object.

It is distinguished from desire by the fact that desire is actual, whereas impulse is habitual; and that the concept of the desired object precedes the volition in desire, but follows it in impulse.

Impulse has its basis in disagreeable sensations and obscure concepts which become the seat of feelings of discomfort. This vague feeling of discomfort creates the general, indefinable impulse to pass from the painful state of mind into a more agreeable one, the way thereto not being indicated by any clear concept. Impulse is therefore blind, and only by means of struggle and accident does man recognize in certain objects the natural means of satisfaction for the impulse.

From the unpleasant sensations of hunger and thirst there is originally developed a general indefinite impulse to remove these sensations in some way. A certain restlessness, which expresses itself in stirring and seeking, impels the animal and the child, until both, perhaps after many unsuccessful attempts, find in appropriate food the general means for the satisfaction of hunger and thirst. In this way the food impulse is formed, which seeks food in general, but not a particular food, like oysters or trout.

The definition of this impulsive disposition implies that it is a natural impulse. The disposition toward certain desires which habit, education, and culture implant in man, though not less habitual and at times not less powerful, are thereby excluded. There is no impulse for smoking, for ornamentation, or for political freedom, even though the struggle for these not seldom appears with all the force of a natural impulse.

Impulses may be distinguished as physical and as psychical, according as their cause lies in the excitation of the nerves or of concepts.

The general excitation of motor nerves and muscles creates the impulse to motion, which is particularly active in children, but which decreases with the decreasing activity of the nerves and muscles in age. The kicking of the infant, the wantonness of the boy, the gymnastic play of youth and men are an expression of this impulse. Every physical restraint (fetters, stocks, etc.) appears as a painful condition, because it suppresses this impulse to motion. Other physical impulses are those of a sexual nature and those of hunger.

As psychical impulse, we may mention the universal concept impulse, which appears as an impulse for spiritual food, and which has its basis in the struggle for movement among the concepts. Spiritual *ennui*, brought about by a lack of sufficient flow of representation, is a well-known tormenting condition; whereas entertainment, with its free change of concepts, is the most desired form of satisfaction for this state.

Other psychical impulses are those for communication and society. In a certain sense, there may also be added the impulsive desire for honor, possession, and dominion.

There are also mixed impulses, whose explanation is to be sought as well in the bodily as in the spiritual organization of man. Among these may be classed the impulse to activity arising from the desire for physical motion and for mental movement, and the general impulse for preservation which causes man to undertake everything in order to sustain his own existence and to rescue it from danger.[1]

1) From the circumstance that he is often unskillful in this, since, for example, when in danger of drowning, he raises his arms out of the water instead of keeping them under, thus promoting his own sinking. it does not follow that he has no impulse towards self-preser-

In the animal world impulse takes the form of *instinct*, of which merely a few beginnings are found in reflex-action. (Comp. § 25.) Instinct is distinguished from impulse in the fact that it leads not only to desire, but to its satisfaction. It rests upon such a constitution of the animal organism that, on account of a sensation arising in the seat of desire, the organism produces of itself movements which lead to the satisfaction of this desire, after the analogy of reflex-action, and thereby secure the preservation and continuation of organic life. The intelligence which directs man in his movements and deeds is mostly represented by instinct in the animal world, in accordance with which animals act in the choice of food, the structure of dwelling place (nest), in migrations, and cunning artifices.

Remark.—As contrasted with man, the animal is in every respect more limited, and his bodily structure is therefore pre-formed for particular movements and activities, which, stimulated by instinct, give rise to the movements necessary to satisfy the awakened desire. The young duck knows instinctively, upon its first contact with water, that its body is adapted to the water, and also through what movements it can sustain itself therein. In the same way men have explained the art instincts of certain animals having peculiarly constructed organs; these animals need only to produce activity in the mechanism of their organs, when after a few attempts the movement is directed of itself along the lines which correspond to the idea realized in the organism of the animal; the spider will spin, the beaver will build. It is a more difficult matter when we try to explain the particulars of instinctive activities in these animals, and to tell why it is that bees always build six-sided cells, that every nightingale follows the note peculiar to its species, that the political constitution of the ant state is the same in all places, and that every individual ant, without much instruction, adjusts itself to the social order. These individual facts

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vation, but only that he is lacking in the instinct which, for illustration, guides the aquatic animal. Should man live more in water, experience would soon teach him to make the right motions, and to satisfy the impulse for self-preservation in the water as he does upon the land by keeping his equilibrium, and so forth.

seem to prove that instinct can do much, but not all, that even here much is determined by change in impressions of sense arising from the immediate neighborhood; for we see animals taking account of changeable locality in which they find themselves. We see them in their activities repeating unsuccessful efforts, improving the deficient, etc. The wasp, for instance, uses in building its nest a paper-like mass made from wood shavings and water; but if ready-made paper is at hand, it chooses this before all else.

§ 88. INCLINATION AND PROPENSITY.

Desire is an individual, transitory act—impulse an inner disposition, which ever excites anew a specific longing. Inclination also, with its opposite, disinclination, is a disposition to a particular desire or the opposite, and manifests itself in frequently returning desires of the same sort.

While, however, impulse lies deeply grounded in human nature and is therefore permanent, inclination has its root in a specific round of concepts, which arising in a psychical manner, may again be destroyed. Inclinations have therefore something changeable in them, and vary with the trend of thought from which they sprang. The inclinations of the youth are different from those of the man.

If a desire is often in consciousness it becomes a habit, and produces an inclination.[1] When one has often satisfied the desire to play chess, it is possible that this desire should become a habit, and therefore an inclination.

It is known that the inclinations of man attach not only to his habits but to his natural capacities, or aptitudes. We

1) As is known, the satisfaction of desire is accompanied by feelings of pleasure; these attach themselves to the concept of the desired objects as "helps," and thus bring this concept into the state of striving with an ease corresponding to the number of times which we have already satisfied the desire. There is thus formed in the compass of thought which surrounds the given concept a disposition to desire, which we call inclination. This disposition will lead to actual desire as often as thought turns to the given group of concepts.

understand by these the sum of certain organic conditions which are favorable to a given activity. The greater the aptitude of a man for anything, so much the easier will he form an inclination for it; for the capacity insures the success, and the feeling of successful activity (§ 69) makes the return of the desire a wished-for consummation; *i. e.*, leads desire over into inclination. Man will scarcely form an inclination for that for which he lacks natural aptitude. Education must take special note of aptitude and inclination.

Where natural disposition is favorable to an inclination, or when it has grown up with us through long habit, inclination becomes *propensity*. It is an inclination so strong that it acts like a natural impulse, and is often mistaken for it.

The opposite of inclination is aversion, as disposition to shun an object.

Remark 1.—The aptitudes of men are intimately connected with their bodily organization, especially with certain peculiarities of the nervous system, both of central parts and peripheral ramifications. A hearing sensitive to differences in tone gives aptitude for music; a fine sense of form, coupled with especially favorable structure of hand, gives capacity for sculpture; an active fancy, combined with æsthetic taste, gives aptitude for poetry. Those inclinations of men which are founded upon clearly marked aptitudes, often manifest an energy and persistence which place them near to natural impulses. The painter must paint, though with charcoal on the wall; the musician must sing; the poet must write.

Remark 2.—Where the object of inclination or aversion is a human being, the name *love* or *hate* is used. Yet these terms are used metaphorically for soulless things. Thus the musician loves his violin, the gardener his flowers, etc. Love and hate are distinguished from simple desire or aversion through the fact that the preservation of the loved or hated object is considered, and that the attractive or repulsive feeling may be constant. Not only love preserves its object, but hate also nourishes it, in order the longer to persecute it

§ 89. RULING PASSIONS.

Impulse, inclination, and propensity contain in themselves dispositions to desire which manifest themselves in a great variety of desires. But these desires are capable of being subordinated by principles (apperceiving),—the ego of man, wherein principles have their basis, shows itself stronger than the desire, the inclination, or the proneness, and even natural impulse itself may be held within bounds by rational reflection.

A strong desire is not in itself a ruling passion. It becomes such when it penetrates all fields of thought, subordinating the whole mind with all its interests to itself, and suffering no higher power along side itself in consciousness. *A passion in the broad sense is therefore a desire which has grown so strong that it no longer suffers itself to be apperceived, but itself rules consciousness as an apperceiving concept mass.*

In this there is something anomalous and wrong, for the highest apperceiving concept mass ought not to be a desire, but rather a rational insight.[1] The consequence of this anomaly is a more or less significant change in the estimation of the value of the various interests and affairs of men. The objective measure of value is lost when the sway of reason is abolished,[2] and that of subjective, one-sided passion is established, whereby things assume a worth according as they serve as means for the satisfaction of passionate desire.

In another sense also the mental state of the passionate "suffers." Health of mental life consists in the capacity of

1) In regard to its origin, desire always contains an element of the accidental, is subordinated in its course to constant modifications and contains the source of constant agitations of feeling. Such a concept structure, thoroughly dependent on subjective conditions, does not suffice for the rule of consciousness, which should be governed rather by a permanent insight, fixed by objective determinations; *i. e.*, by understanding and reason.

2) Not that insight is totally wanting; it is there, but it is like the voice of a traveler in a desert.

the concepts to be reciprocally determined, the one by the other. In this sense the passionate man is not entirely sound mentally; because with him this reciprocal determinable character of the concepts is lost, and the passion concepts rule the whole consciousness, without allowing themselves to be adjusted by other concept groups, however important. Passion is blind and deaf to all opposing concepts of insight. The gambler can not leave his play, although his friends or his best friend, and his own reason, prove to him beyond a shadow of a doubt that he will ruin himself and his family by gambling. The passionate man is neither rational nor free in his action, because he conducts himself in opposition to his better judgment and his own ego, in which this judgment in the form of an apperceiving concept mass constitutes an important part.

The disturbed mental health of the passionate man is revealed to the dispassionate observer in the fact that the object of the passion is not worthy of being made the center of all striving and sensibility; and that even where the object is a noble one in itself, as for instance, native land or nation or freedom, the victim of passion does not, in his action, hold himself free from extreme estimation of its importance, as contrasted with other interests of man.

Remark 1.—An essential element in passion is its duration, because this is an important condition of its strength. A passionate outburst may well be a violent emotion, but it is not a passion. Traces of passionate striving are found in all men. It is a matter of reason and moral duty to suppress passion in its earliest stages. (The term *passion* is also used to describe sudden and violent outbursts of emotion, as of anger.—*Tr.*)

Remark 2.—The man who is ruled by a passion finds himself in a very anomalous mental condition; with him the center of gravity for his mental life is shifted to the group of concepts which pertain to the object of his passionate desire, all other interests being violently shoved aside. He regards nothing not connected in some way with

the object of his desire; the miser regards the world from the standpoint of possession, the ambitious man from that of distinction above others, the sensualist from that of the gratification of the senses. For the victim of passion, nature in vain unrolls the sublime picture of her eternal rest; he is blind to her ever renewed beauty, dull to the pleasures of art, deaf to the teachings of science. Desire is alone able to move him. The gambler has thought only for the gaming table, the miser only for the accumulation of useless property, the sensualist only for the images of pleasure. The noble enjoyments which offer themselves upon all sides to the unbiased mind—the panorama of colors, the harmony of tones, the association with noble minded men, the stimulus of intellectual and æsthetic pleasures; poetry, art, literature—all go for nothing to the mind closed by a passion.

§ 90. THE GROWTH OF PASSION; ITS RISE AND DECLINE.

A passion is a desire grown dominant. Since every desire has its root in a particular concept mass, the rise of a passion presupposes the formation of an exclusive concept group, in which it rests, and from which it draws its strength. This exclusive group of concepts must also be the strongest known to consciousness. All other concepts of the man, together with their attendant feelings and desires, must be subordinated to this one.

The desire may obtain this firm concept basis by taking its rise either in the natural impulses or in those habits and inclinations which have become second nature; these may indeed become passions as well by means of excess as through lack of satisfaction.

Desire strengthens with every gratification (Comp. § 84; also the Remark). If a man neglects to suppress the growing desire now and then with other nobler and opposing aspirations, if he fails to apperceive it by means of stronger concept masses; if on the contrary he gives it free rein, it may well happen that the desire will pass from the stages of incli-

nation and propensity into that of passion. Most passions arise from lack of moral discipline, and the older they grow, the more difficult does their mastery become.

Entire denial of satisfaction, especially with melancholy natures, may inflame the powerful desire into a passion. External opposition to satisfaction erects a dam, against which the stream of desire struggles. If the stream is too weak to break down the dam, it dashes itself against it, spreads over the surface, and finds an outlet in other endeavors; if powerful enough, it breaks the dam, and rushes on with unchecked freedom. Unsatisfied desire may also be transformed into a silent longing; or, increasing with opposition, it may grow into a passion.[1]

In the moment when the powerful desire increases to a passion, it at once takes on the deceptive guise of freedom and of strength of character. The old historical ego concept, with its apperceiving masses of concepts, is indeed suppressed, but a new ego—the man of passion—takes its place, and this ego knows no opposition, no reflection, no choice of means. If the object of the passion chances to be a noble one, as, for example, patriotism, friendship, national or humanitarian endeavor, it may be that in this stage of passion great things may be done. The great deeds of history, which we to-day admire, have mostly sprung from noble passion.

But the apparent freedom and grandeur of passion diminish according as the contradictions come to light, which exist between the whole field of thought in passion, its undertakings and deeds, and the old historical ego of the man and his better (moral) insight. These contradictions are never lacking, and a noted psychologist (W. F. Volkmann) remarks, "The freedom of passion would only be true freedom if there

1) The oft-cited expression of Rochefoucauld is here appropriate, that opposition is to our passions what the storm wind is to burning brands; the smaller are extinguished, but the larger are fanned into flame.

were no conscience." From Diderot to Hegel, passion has not lacked for advocates who have sought to derive all great things from it; but even if passion is not at all times immoral (think of fanatics in humanitarianism and religion), it is at least always dangerous to morality, because it may at any instant collide with the conscience of man, when the latter must succumb (as, for example, when a fanatic in well-doing would steal leather from the rich in order to make shoes for the poor).

Passion furnishes a still sadder picture in the stage of inevitable degeneration. The charm of desire is dulled by excessive gratification, the break between the passionate consciousness and conscience gives rise to bitter remorse, and the feeling of power, apparently so great in the man of passion, collapses into pitiful helplessness. It is seldom that man is stimulated by passion to a moral life; in many cases the result is spiritual and physical degeneration, so that passion breathes out its life in bursts of enfeebled emotion or ends in despair.

Remark.—To guard against passion is one of the chief duties of man. He will not easily sink beneath the yoke of passion if accustomed to a moral discipline through early obedience to the commands of parent and teacher, as well as to the regulations of society (civil and local), through strictness and toughening, moderation and abstinence, the avoidance of eccentric pleasures, and above all through yielding to a habit of thought rich in moral ideals. The curing of passion will be so much the more difficult, the more it has fastened its roots in the whole consciousness, and the more sensuous passion, *e. g.*, drunkenness, has found a strengthening resonance in the organic changes in the body. Here the food of passion must be withdrawn; *i. e.*, it must be forcibly torn away from the compass of thought in which it has its seat. To this end certain soul doctors have recommended the transference of the subject into another and opposing passion, which is evidently absurd. An elevated view into a world of ideal moral relations is better for the patient than the fog of a new passion. "Great interests cure the littleness of passion." A noble

friend, an elevating lecture, scientific study, enjoyment of art, religious culture, but above all a moral deed, may be the guide-post to a new, harmonious, and satisfactory life. Here, least of all, will gruff opposition and barbarous treatment produce good results. "On the contrary, the experience has recently been made that even ferocious beasts can be made gentle by good care which relieves and anticipates their needs. What is to hinder the assumption that the rapacity of the tiger and the hyena is a passion which arose from acute unsatisfied hunger and then became habitual? We see at least that the chained dog is made as ferocious by his long suffering as would be the case with a man." (Herbart Psych., II., p. 112.)

§ 91. VARIETIES OF PASSION.

Any desire may become a passion, as soon as it obtains an apperceiving influence over all concept masses of the (potential) consciousness, and it remains such as long as this influence continues.

A strong motive, such as is offered through the senses, is important here. On this account most passions arise from natural impulses, the physical as well as the psychical.

The food impulse may degenerate into gluttony and drunkenness (intemperance in eating and drinking)—the sexual impulse into lust—the general impulse of self-preservation into selfishness, which recognizes nothing but self—the impulse to activity into a passion for play (not that which arises from a love of gain) and entertainment—the impulse to communicate into love of gossip—the social impulse to love, which may also become passionate, and may embrace the individual, the family, the nation, and even all humanity in fanatical friendship, family love, or patriotism.

Rudely repulsed in its devotion to another personality, love, in consequence of injured feeling of self, springs into its opposite, hate, which is mostly directed towards individuals. While love, uncertain of its object, is tormented with jealousy, hate breaks out in search for revenge or humiliation.

Honor, passion, power, appear to selfishness as the highest objects of desire, and hence selfishness manifests itself as ambition, avarice, and struggle for dominion. Ambition seeks recognition of the personal ego in the consciousness of other persons; it is not ignoble when it is satisfied with the quiet recognition and moral approval of others; it becomes vanity, however, when it seeks for outer acknowledgment of inner worth; it is transformed into pride and haughtiness when it elevates itself above others, underestimating them; or it becomes the pursuit of fame when its aspirations fly higher. Niggardliness and avarice, as passionate pursuit after possession, try to bring material wealth under the sway of the ego, in order to make it the means of satisfying desire; they overshoot the mark, however, because in the gathering of wealth they forget its purpose, and thus make the means an end.

The struggle for dominion ignores dead property, but seeks to bring other free and equal personalities under the rule of the one ego. This is what brings slavery and despotism into the world's history, and, as a reaction, produces the mania for liberty, which in its passionate state manifests itself as "despotism from beneath upward."

The scheme of the passions is not yet concluded; for not only may each passion mentioned be shaped according to the individual qualities of its object, as well as the minor modes of its origination (what aspects do not love and hate assume?), but it may produce entirely unique relations and passions; *e. g.*, the mania for gathering postage stamps,[1] for betting, etc. Wherever passion applies itself with one-sided exclusiveness, as, for example, in gathering postage stamps, it takes on the character of monomania, and approaches very close to insanity.

1) There are now several newspapers for stamp collectors. The melancholy disposition of the English is very favorable to the rise of monomania; yet the same characteristic is also found upon the continent.

Remark.—Crudity as well as culture has its passions. In the former they arise from the lack of apperceiving concepts; in the latter from the many needs which culture produces.

§ 92. VIOLENT EMOTION AND PASSION.

Passion as a permanent mental state is not seldom confounded with violent emotion (passion in the narrow sense). As a matter of fact, the two states are related, since in both free self-determination is altered and the normal equipoise of the concepts powerfully disturbed on account of the suppression of the ego concept.

But with sudden emotion this disturbance is momentary, being conditioned by physiological reaction; it is lasting, however, with passion, on account of permanent distortion of the whole round of spiritual interests of man. Both are blind, because they destroy a correct perception of things as they are. But this blindness, in the case of sudden emotion, arises from the suppression of the activity of the understanding (thought in general); in the case of passion, from the arrest of the activity of reason. The man with a ruling passion is blind to everything which lies outside the realm of concepts pertaining to his passion; within this realm he often develops a sharp power of vision and a great acuteness in the choice of means to the desired end, which is not the case with those emotions which rob man of his power of reflection.

Ruling passions and violent emotions are to be distinguished also in other respects. The latter arise from feelings, but passions from desire; violent emotions are more superficial, passions have their roots deep in the mind; these emotions embrace the actual, passions the potential consciousness (§ 27); on account of their violence, emotions are expressed physically, passions are compatible with the utmost outward quiet and coolness; emotion undermines more the

bodily welfare, passion endangers the mental health and the moral state of man.

The one is more acute, the other more chronic: hence the principle,—*the more violent emotion, the less passion; e. g.*, the easier the equipoise of the concepts is raised to the height of violent emotion through momentary influences, the more difficult will it be to produce that permanent, all embracing, distorted state of mind, which is the essence of passion.

Yet there are states of mind in which passion and violent emotion go hand in hand. If the latter is repeated often enough, it may become fixed as a passion—passion may temporarily break out into violence. The paroxysms of passion are these same violent emotions (passions in the sorrow sense).

In this respect, however, the passions vary greatly. Some whose passions spread out over the whole potential consciousness and in this way acquire a very broad basis, are very free from agitations of emotion; as, for example, the cool, calculating miser. Others, with whom the sickness of the soul is centered in a very limited group of concepts, break out so much the easier into violent emotions, as is the case with love and hate.

Remark 1.—Passion produces a one-sided narrowing of attention to its peculiar line of thought; it arms the eye for this group of concepts, while diminishing its power for all else (keenness of jealousy, of avarice). This one-sidedness makes itself felt in thinking through the warped but often very acute judgments of the man of passion. Memory and imagination are active within this one-sided sphere; reason and self-consciousness (the historical ego) are more or less suppressed.

Remark 2.—It was one of the many services of Kant to psychology sharply to distinguish between passion and violent emotion. The works of Maas and Feuchtersleben are worthy of note as contributions to the literature of the passions, and among the older writers, those of Descartes and Spinoza.

CHAPTER III.

WILL.

§ 93. WILL IN GENERAL.

Desire in accordance with its idea seeks satisfaction. If this appears impossible, the impulse remains mere wish, and has no further significance; but if to the desire there is added a belief in the attainability of the object of desire, the desire passes into will, which reveals itself in action and deeds.

An object of desire is attainable when it appears as the final member of a series of changes which are related as cause and effect, the first member of the series proceeding from the ego who wills. If such a causal series comes to the support of any desire, the desire is transformed into will; the object is not only desired, it is willed; there is no insurmountable obstacle in the way of the realization of the desire.

The construction of such a causal series is a matter of the understanding, in connection with memory and imagination. Memory calls up causal series (§ 35) which, as experience in various cases has shown, have led to certain definite results, and imagination constructs, if need be, various needful modifications and combinations of these series, the judgment must choose from among them those which will lead most surely to the desired object. The acuteness of the understanding is shown in this choice.

Will means, then, the desire for a certain result, and the certainty of its attainment, or at least a *belief* in the attainability of the desired object; for in the mental state

called will it is indifferent whether the causal series actually leads to the attainment of the desire or not; the subjective conviction, the belief in the attainability of what is desired is here sufficient. The impossible may therefore be willed as soon as it appears to us as possible; and for the same reason we can only desire that which is really possible and practicable, so long as we are lacking in insight as to ways and means of reaching it. The unreasoning child wills that which the adult merely desires; the inexperienced youth wills far more than the man, who has often tested his strength in trying to realize his desires.

The clearer the insight as to the attainability of an object, the more conscious a man is that he can obtain what he desires, the stronger his will is.

But since actual experience alone can give true information regarding this point, will increases in energy with the number of actually attained results, and we appear with the greatest decision and firmness of will upon those fields in which repeated experience has taught the effectiveness of our powers in reaching results sought for.

Remark 1.—Hence the modesty of will with which the first attempts in a new field are made, and the increasing confidence and even audacity which follow repeated success. How weak and anxious the will of a rope-walker is likely to be which induces him for the first time to mount the rope, and with what courage he goes upon it after the experience of many years has taught him his own power! The oftener in general the volitional acts of a man are crowned with success, the more does the habit of seeing his desires gratified grow upon him, and the more frequently does desire pass into willing. Hence his displeasure when fate denies satisfaction to such a man.

Remark 2.—Herbart characterizes willing very happily. "He who says, 'I will' has already mastered the future in his thought; he sees himself already completing, possessing, enjoying. Show him that he can not, he wills no longer, provided he understands you. The desire may perhaps remain, and rave tumultuously or attempt to

gain satisfaction with all cunning. In this fact there is a new exercise of will, not exerted towards the object directly, but towards the movements which one makes when he knows himself master of them, hoping by means of skillful combination to reach the desired end. The field marshal desires to conquer, therefore he maneuvers with his troops; he would not will to do this, were he not conscious of his power of command."

§ 94. DEVELOPMENT OF WILL.

Desire is at first a blind impulse, without relation to the attainability of the object desired. It is not even a *wish*, so far as this is based upon a resignation of the actual attainment of its object, and hence upon the judgment regarding its attainability.

Each of the more intensive impulses places one in a certain mental unrest, which manifests itself in a kind of bodily activity; *i. e.*, in movements. These movements are originally—in the undeveloped child and the animal—out of all relation to the desired result; and, at most, can be regarded only as blind attempts to reach this result. The infant gropes with its hands, and the young chick pecks about aimlessly.

By and by, beginning to succeed through accident, imitation, and the guidance of individual attempts, man and animal learn to manage the machinery of the body (compare § 35). They get the experience that certain bodily movements lead to the attainment of what is desired.

With the bodily movements, however, other and external results appear, which, though not immediately desired, lead by longer or shorter paths to the attainment of the object of desire. The movement is here the beginning member of a series, at whose close the desired result stands. If the final member of this causal series is desired, all the other members of the series arise to consciousness according to the laws of reproduction (§ 32), and these likewise fall into the state

of striving. They appear as means, which are in this state, not for their sake, but for the sake of the end to be reached. Thus the end may elevate, but not sanctify the means.

By means of these causal series, our experience is ever widened concerning the serviceability of the movements of the body, and the adaptability of external things as means to the desired end. If, in any specific case of desire, we succeed in constructing such a causal series from our former experience, the outer result is not only desired, but expected as soon as the first member of the causal series appears. This expectation is expressed in the formula, "I will," which means, "I can, and I shall,"—if not synonymous with "It will," when the outer result for a time fails to appear, or the judgment was erroneous, or when unforeseen events are able to turn the series of changes aside from the desired consequence.

Not only memory, but also imagination must assist in the construction of the causal series, which sometimes assumes an exceptional length. It is not a single series, but a whole web of series that the imagination weaves, and which is designed to lead from the desire to its satisfaction. The paths through this texture, which suffer various modifications in the various stages of will according to time and circumstances, are *plans*. (Plans of generals and chess players—plans of passion.)

With this kind of carefully planned undertakings of the will, it is not only the first member of the causal series from which the will-activity proceeds, as in one simple act of the will (death stroke); but the activity expands into a series of actions, with which the corresponding changes of the external world go parallel as partial results, which finally lead to the final result (winning a game or battle—satisfaction of a passion). According as the partial results occur, are modified or do not come to pass, the further procedure in the plan of

action must be changed. Here, above all, foresight and presence of mind are necessary.

The partial results and the means by which the will-activity pursues its course may, in themselves, be not only indifferent, but even detested objects. We often desire a certain result, but detest the ways and means which lead to it, because, in themselves, they are unpleasant or offensive. Indolence desires the good, but does not will it, on account of shunning its difficulties.

Such opposition, against which the will strikes, assumes the character of difficulties and hindrances, on which the power (energy) of the will may be measured. The weak will abandons its proposed ends, and lets the hands fall into the lap, as soon as its way is crossed by opposing forces; the energetic will strides over all hindrances to its appointed goal.

Thus in its consequences, which may be turned aside by opposing influences, the will shows itself to be a true and actual power, and reveals itself as such in the struggle with nature and with the opposing effects of other wills.

Remark.—The energy of will, which is an object of immediate moral approval, can only gradually be developed by means of persistent actual will-attempts and will-actions and presupposes a certain callousness of feeling, in contrast to the present very common deviations on account of feeling, by which all great and difficult undertakings are ruined. An Argonautic expedition, a lion hunt in Central Africa, the ascent of the Gross Glockner, a north pole expedition—all these are executed, but the preservation of untarnished honor and of clear conscience upon the Argonautic journey of human life is a task which summons up the full will-power of man.

§ 95. OUTWARD EFFECT OF WILL. ACTION AND DEED.

It lies in the nature of will to act. An inactive will would not deserve the name, but would be mere desire.

Action, in a general sense, is a movement of the limbs as the beginning member of a series of changes, for the purpose of attaining what is willed. Deed is the sum of those voluntarily produced changes of the outer world, which proceed from the action. The deed is, therefore, that result of willing which has become objective through action.

Will passes into action and deed when the ego produces the beginning member of that causal series which constitutes an integral element of the act of willing. This production presupposes the mastery of the mind over the movements of the body;[1] a mastery which with animals is given by nature in the limited, machine-like contrivance of their bodies, but which is attained by man only by means of painful practice and extension, beginning with the earliest childhood, and never concluding.

Not only sense-perceptions but muscular sensations are associated with the movements of the limbs. With a lively concept of a movement, A, which is to be executed, there is reproduced the muscular sensation, a, which is peculiar to it. In so far as the latter has the requisite degree of strength, it acts upon the motor nerves after the manner of reflex-action, through an excitation proceeding outward from a central organ, so that through this action the conceived movement is brought to pass by means of contraction of the muscles.

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1) Injury to the body, weakness of the muscular system limits the mastery of the soul over the body, and makes man partially or wholly incapable of action. The rigid *tetanus* spasm, as a total cessation of muscular activity, makes every manifestation of will and of mental state impossible. One in this condition must quietly suffer himself to be laid on the bier, etc. Yet it must not be overlooked that under certain very favorable circumstances, the slightest movements suffice to give the will an energetic expression; as, *e. g.*, the wink of a king, the gesture of a general, upon which the life and death of thousands depend. Very correctly does Horace express the supreme power of Jupiter with the words: "..... *imperium est Jovis, cuncta supercilio moventis.*"

The extraordinary capacity of the body for culture as an all-sided and serviceable instrument of the soul, depends upon a successive accommodation of the bodily movements to the desired result. Just as the child learns the first clumsy use of its hands, so afterwards it gradually learns the guidance of the pen, the brush, the chisel, the bow; and just as the infant learns the first balancing exercises of standing and walking, so afterwards it learns dancing, rope-walking, etc.

The deed is the sum of the outer changes which the will produces by action in the external world, yet only in so far as the changes correspond to the expectations of the will. The outer changes introduced by the actions, depend partly upon the will and the action, but partly also upon the nature of the outer things with which the action comes in contact. Only in so far as the changes produced by this second outer factor were foreseen do they belong to the deed.

The deed is, therefore, the agreement between what is willed and what is accomplished, between design and result. The deed reaches only so far as the two coincide. The judgment as to how far a given result is a deed, is a matter of imputation.

Remark.—The actual execution of a conceived movement, A, presupposes the reproduction of the associated muscular sensation, a, up to a certain degree of intensity. If this muscular sensation is wholly wanting or only faintly reproduced, the movement, A, although conceived, is not executed. With sense-perceptions, as is well known, bodily sensations can not, under normal conditions be reproduced, so that the intensity of these sensations is lost (Comp. § 34), and the satisfaction of a desire resting upon the production of a sense-perception, is not to be thought of when the perception is merely reproduced. The case is otherwise with movements; here the real follows the conceived movement by means of the reproduced muscular sensations, often involuntarily; as the movements of hand and foot in imitation, the movements of the organs of speech in thinking aloud, etc. Through the inner union of the muscular sensation with the concept of the motion, the certainty and rapidity in the execution of desired

movements are brought about, together with that finer shading which we admire in the virtuoso of every kind (gymnasts, musicians, workmen, operators, and the like). On account of the enormous wealth of motions and their gradations, it ought not to surprise us that the formation of the requisite associations costs time and labor, and that not seldom a failure to make the right movement occurs, because of the reproduction of the wrong muscular sensations. When the sharpshooter, or the billiard-player aims, when the gymnast reflects though ready to spring, he is seeking in memory for the right muscular sensation which shall lead to the desired movement, and he thereby manifests a lack of the virtuoso's skill The chirurgical operator must not hesitate; he must cut as soon as he applies the knife. Only by means of continued practice do the associations gain firmness, the motions certainty.

§ 96. INWARD EFFECT OF WILL. FREEDOM IN MENTAL STATES.

Outwardly the dominion of the will manifests itself through interference with the course of events, by means of actions and deeds, inwardly, through interference with the course of representation, by means of that mental activity which we call voluntary attention, and direction of the course of thought.

It is well known that one may "at will"; *i. e.*, at pleasure, concentrate his attention now upon this, now upon that object, can give his thoughts now this, now that direction. Desire, volition, and satisfaction here follow in immediate succession. That which is here desired is the clear representation of what is now hovering in consciousness as mere outline. This representation is willed when, according to the experiences made by inner sense activity regarding the course of our concepts, the means have been learned by which one can direct the course of representation to a given point, or concentrate it in particular concepts. Thus, the desired mental state is often found at the close of a known

concept series; this can be reached by running through the series, after calling the beginning member into consciousness. If, for example, a narrator wishes to tell a story, he knows that he must first think of its beginning, etc.

According as the concept mass to be produced by the will belongs to memory or to imagination, this process will belong to voluntary remembrance, or voluntary imagination.

In regard to thinking, will activity manifests itself in reflection; *i. e.*, in voluntary direction of the course of representation upon the object of thought.

The isolation of individual masses of concepts from their psychical connections, and their transformation into notions is thereby essentially promoted.

Remark 1.—This section appears to contain a difficulty, because one does not at once see how, alongside of the government by the laws of reproduction, a second dominion, namely, that of the will, can interfere in the course of associations and series. Yet the difficulty is resolved when one reflects that the will, which directs the course of representation, is itself only a product of the reciprocal actions of concepts, which are governed by the laws of reproduction, and that it is by no means a foreign product. But if these will acts are produced together, they cross, and concentrate the series of the thought complex in a manifold way, since by means of insight, an essential element of will, they direct the series. The insight into the connection of concepts, which even with those who are not psychologists is gained by inner sense activity in an empirical manner, reveals the means for producing desired states of mind. It is a well-known fact, that one may at will produce unusual feelings and states of mind; as, *e. g.*, gayety, gravity, sadness, and even of devotion, by an appropriate "concentration" or "diversion" of thought.

Remark 2.—Thought in most cases is mediated by action of the will. The fixing of notions is made possible by voluntarily turning the attention away from all the minor determinations pressing into consciousness upon all sides, and which are more or less accidental to the desired state of thought. The repulsion of these foreign and disturbing elements of consciousness requires a significant effort of the will, and with long continuation of thought, leads to that weari-

ness which one notices upon giving himself up for a long while to concept masses which are to be held firmly in consciousness, among which are found those pertaining to labor. But in labor the persistent concept mass is fixed by some object of sense with which one busies himself, whereas in thought, which has to do mainly with abstract notions, there would be no such fixing through sense, did not the audible and visible signs of language take the place of other sense objects. Hence from this side also we arrive at the conclusion that thought without speech could have but a feeble existence. When we here present will as existing in the sense of thought, we wish by no means to assert that the creations of thought are the products of subjective will. No view could be more incorrect than this. Will merely prepares the ground of consciousness for the activity of thought, in that it can give to the concepts meeting there those relations which alone answer to their objective quality. To try to force them into other than these relations by subjective will, would be as vain as the effort to see black where there is only white.

§ 97. REFLECTION AND SELF-DETERMINATION.

If a desire has assumed the dimension of a passion, it silences all other interests and considerations which lead men in the decisions of will, and presses with final power towards satisfaction.

Here all reflection relating to the end is excluded, and only that admitted which relates to the serviceability of means. Self-determination in such a case is not to be thought of.

It is otherwise with desire which is not passion. Here other considerations and interests of the individual become valid, which either advise the execution of the will or warn against it, according as they appear to be furthered or hindered. There is placed before consciousness the alternative to will or not to will, that is, to refrain from willing. This is the first stage of reflection.

In most cases, however, there is placed over against the desire, a. which rests upon the concept group, A, an oppos-

ing desire, b, or even a third, c, which desires have their seat in the opposing concept groups, B and C. A struggle now arises among the desires, similar to the opposing concepts which struggle for the momentary control of consciousness. This struggle of the desires is extended to the concept groups in which they have their seat; *i. e.*, to the complex of those interests which speak for the various objects of desire.

This vacillation of the ego among various will determinations in order to unite itself to one of them produces the state of reflection. In reflection the ego runs through in thought the various possible ways of willing which a given case offers, and vacillates among them just as a subject concept vacillates among the various predicates offered, before the formation of any given judgment. (Compare § 49.) Reflection with thinking is called *theoretical;* with willing, *practical.*

So long as the motives which correspond to the various ways of willing hold an equipoise, the reflection continues, and no decision is made. As soon, however, as any one of the possible will actions under consideration receives unexpected reinforcement, whether from without or from within, the concept series serviceable to this action presses into consciousness with preponderating power, and the decision is made.

§ 98. PSYCHOLOGICAL FREEDOM.[1]

Psychological or inner freedom is the capacity of self-determination. The question is not whether every act of will is independent of every determining cause, but rather whether the determining causes are chiefly within the personality, or outside of it; *i. e.*, in external conditions and causes. In the

1) Compare the author's work, "Problems of Happiness," xvii., Freedom. p. 171, and the following.

first case man determines himself, in the latter he is determined from without.

Man comes in the course of his mental life into the greatest variety of outer situations, which impel him to the most various volitions and actions. Should only these outer influences prevail (that is, should one always howl with the wolves or swim with the stream), he would be in no sense free, because his action would depend, not on himself, but upon external circumstances.

The freedom of the will becomes more positive, the more man determines himself in accordance with inner, unchangeable rules, and in opposition to outer influences. These rules are called *practical principles*, or *maxims.*[1]

A practical maxim is an apperceiving concept mass for a given class of volitions. If in several similar cases, where the decision might have been one way or the other, the decision has been made in the same way, a practical rule of volition and action is formed, which is decisive for future cases of this kind, since it brings its apperceiving power within the vacillation of reflection. A practical maxim is therefore nothing but a universal volition, whose power increases with the number of cases in which it has arrived at action. The oftener, for instance, one has decided against the temptation of the instant to gain a small advantage by lying, and has told the truth, the firmer does the maxim of inviolable truthfulness become within him, and the more completely does it determine his future volitions.

1) Maxims, or principles, are distinguished from mere aphorisms in that they do not contain mere theoretical directions for any sort of will action, as, "be diligent," "be liberal," "do not lie," but are true psychological forces, which have gained their preponderance of strength from the fact that they have been followed in many like cases of actual volition and action; in other words, from the fact that one has actually been diligent or liberal, that he has not lied, even when circumstances tempted him thereto.

Remark 1.—The development of maxims is introduced by "practical reflection" (§ 97). He who acts without any reflection acts without freedom, and independent of principle. But he who is accustomed, not to follow blindly the desires which press into consciousness, but to be guided by reflection upon reasons and counter reasons, will soon come to will and to act in the same way in analogous cases. Similar volition will soon assume with him the significance of a practical maxim, and determine all subsequent volitions of this sort.

In this way a habit of action is formed within the man which makes him independent of the external emergencies of life; *i. e.*, which makes him "psychologically free."

Remark 2.—Psychological freedom is to be distinguished from the so-called absolute or transcendental freedom, by which is understood the capacity of establishing absolutely the first member in a chain of causes and effects. We cannot admit that man has this freedom; for each act of his will is in no wise the beginning member in a causal series, but rather itself a consequence of preceding causes; viz., the motives according to which he decides what his volition shall be. These motives are rooted and grounded in the whole mental life. All concepts which work together to place any given concept in a condition of desire, and enable it to prevail over opposing impulses, are involved. In order that a concept pass into desire and volition, it must have been just so often in consciousness, and have entered into just these combinations with other concepts; must have been united with just these furthering concepts and concept series, these and those sense-perceptions; it short, just this and not that must have happened. Every individual act of will is therefore a product, of which the events of our whole mental life form the determining factors; so that man, with his volition, is not only not taken out of his chain of causal nexus by which all the events of nature are united, but is rather most intimately united to it. Experience completely confirms this observation. When we take the trouble to investigate why we have willed thus and not otherwise in any given case, we shall find the motives to the action, so far as they can be discovered, scattered more or less over our whole psychological past. It indeed *appears* to us, when, in a state of reflection, we wish to run through the various possibilities of volition, that the matter rests with us, and that we might just as well have decided one way as another; but it is *only an appearance*, because we do not feel our inner necessity, and because the self-observation is here directed only

upon the different possible volitions and the ego vacillating between them, but by no means upon the psychological depth of secret effective motives, invisible to the inner eye, and which press the ego, now to this, now to that volition, and finally bring about the decision. Where with an individual no fixed combinations of concepts, no organic groups of concepts, no ruling ideas, no guiding maxims have been formed, when, therefore, all individual concept groups help with about equal force to decide an act of will, it will require but little effort of another to bring the decision to this or that side. Because now this motive, *e. g.*, an obscure remembrance, something which merely occurs to the mind, an insignificant perception, escapes self-observation on account of its minuteness, it looks as if I decided purely according to subjective will. This is, for example, the case with the child, whose volition vacillates between the objects of his choice, like the concepts which come and go in his consciousness. Where, on the contrary, as with the adult and principled man, all concepts have experienced an organic formation, where the single exists only in relation to the whole, where all concept groups are limited and clarified, the one against the other, then it will be easy to discover why, in a given case, he has determined himself in one way rather than in another. But precisely here, with the free man, it is evident that the volition is only the consequence of other presuppositions; viz., the motives upon which it is based. When, therefore, we are not able to see the connection between a volition and its conditioning motives, we have on this account no ground for denying it. But aside from all this it may be shown that the idea of transcendental freedom is nonsense. For as soon as this is admitted, the moral order of the world loses its immovable basis. Every systematic influence upon man, therefore all education is foolishness, for it can produce no effect upon volition, and therefore none upon morality. The deeds of history are but the throws upon the dice board, for the volition which called them forth arose from chance, and might just as well have been otherwise. Any pragmatic view of history is mere subterfuge. Any reciprocal trust in the intercourse between men, the formation of moral relations (love, friendship) is impossible, for he who to-day heaps upon me the proofs of his good will, may to-morrow, without the slightest occasion, persecute me with the arrows of ill-will. The building up of will into character would. finally, be an inconceivable undertaking.

§ 99. REASON.

In psychology we have studied two kinds of reflection: the *theoretical* in the formation of the judgment, and the *practical* in self-determination. In the former the subject of a judgment is determined with respect to the predicate; in the latter the ego is determined with respect to a volition.

The decision, which closes the state of deliberation, is brought to pass by means of certain controlling, *i. e.*, apperceiving concept masses, which put an end to the vacillation, either of the subject among several predicates, or of the ego among several proposed volitions, since they further the predicate or volition corresponding to themselves in content, and at the same time suppress the opposing determinations. Upon the content of these apperceiving concepts depends our judgment of persons and things, as well as the direction of our volition and action.

In the realm of theoretical reflection, notions are the apperceiving forces which determine our judgment.[1] These notions are, however, drawn within the circle of reflection when one tries to fix their reciprocal relation by means of a new judgment. This is a reflection of a higher kind, whose beginning is mediated by higher, more abstract notions. By continuous comparison of notions which form the object of our theoretical reflection, we reach the highest (theoretical) notions, which as the highest means of thought are called *ideas*. Magnitude and number, matter and force, God and nature, substance and quality, are examples of such higher ideas.

But practical reflection, or deliberation, leads also to highest principles, or maxims (§ 98), which as soon as announced assume the form of fundamental ideas concerning the unconditioned worth or worthlessness of volitional acts.

1) These notions have themselves arisen in accordance with the manner in which we have previously willed, for each judgment is made but once, and is then transformed into a notion. (Compare § 49.)

These highest principles which guide the decisions of will, just as the theoretical ideas do the formation of judgments, may be called *practical ideas*. Right and equity, good will and perfection, are practical ideas.

The ability to form ideas is the highest faculty of man —reason. Reason may be distinguished as theoretical and practical, according as it acts in the field of theoretical or of practical reflection.

Reason is distinguished from understanding in this, that its rule is not confined to one or several fields of thought, but that it pertains to the whole of human reflection and volition, upon which it seeks to place the stamp of harmonious unity. While there are as many varieties of understanding as there are connected, independent groups of concepts, so that it is not irrational to speak of a mathematical, a judicial, a commercial, or a scientific understanding, reason in its universal activity is the *indivisible one*, whether its decisions relate to theoretical reflection or to practical action.

Remark 1.—Although the germs of reason's activity show themselves very early in man, they are first found in a ripened state in the later years of manhood. The activity of reason shows itself where man, coming out of his isolated fields of thought, tries to bring the total of his convictions under a single principle. This occurs usually in the later years of life. Until then man allows himself to be led in his judgments and volitions, *by the reason which is about him*, and which speaks to him in the form of moral maxims, customs, public example, social order, and above all of religious worship. For, truly, the development of reason, *i. e.*, the fixing of the inventory of our theoretical and practical ideas, is not the task of the individual but of the whole race; and one may in general say, that not only the individual, but also mankind, becomes more rational the older it grows.

Remark 2.—The sway of reason manifests itself in the reciprocal determinableness of the concepts, the one by the other, in an all-sided and correct estimation of the various human interests. Children and animals, passionate and insane people have no reason; the former,

because they do not arrive at the point of comparing concept groups and interests with one another; the latter, because being confined to one line of thought, they do not arrive at a correct estimation of all. Lack of reason can be recognized as blindness and foolishness, since that is highly estimated which is not worthy of such estimation. Practical reason manifests itself subjectively as conscience, in so far as this reveals to man what is good and what is bad.

Remark 3.—Reason is sometimes defined otherwise, since it is represented as the "faculty of the supersensible," as the "faculty of reasoning" (with the syllogism), the "faculty of having *a priori* knowledge" and thereby distinguished from "Understanding," which is said to have to do with individual judgments and empirical knowledge. These explanations do not correspond to the common use of language. In order to solve a mathematical problem which involves profound conclusions, no reason is needed, but only a well-schooled understanding; and the insane man, who is robbed of his reason, may very well busy himself with the solution of a quadratic equation or with a game of chess. What, however, the latter can not do, is to produce an orderly arrangement in the various mental affairs and interests, which demands that the important shall not be forgotten on account of the trifling, and that end shall not be sacrificed to means. While the man of understanding merely investigates the serviceability of means, the rational man turns his attention to the end itself, and, since the end may appear as a means for a higher end, he gives thought to the last or final end, which is also called the ultimate purpose or destiny of an object. Reason may therefore not inappropriately be defined as the capacity of man to know his own destiny.

§ 100. CHARACTER.

On account of the practical maxims which arise from rational reflection, a certain *consistency* is brought into the volitions and actions of men, because in their volition and action they decide similar cases in a similar way.

If with any given man different practical principles have been developed, and a concept mass enters consciousness, urging towards a particular volition, those practical princi-

ples will be reproduced, which have any similarity to this concept mass; *i. e.*, those which suffer an application to the present case. In this way the volition is so far removed from this mass of concepts that it remains in unison with the determining practical principle; that is, it will govern itself according to the principle, or maxim.

This is, however, only possible when no contradiction exists among the maxims. Should this latter be the case, we have a collision.[1] This cannot be removed except as we accommodate our volition to the principle which is acknowledged as the higher. The various moral maxims should not, therefore, stand isolated side by side, but, for the avoidance of collision, be arranged in a specific order, at the top of which *a highest moral principle* must be placed. As a final resort, this highest principle must govern the decision when there is a collision between volition and moral maxims.

In this way, all volitions and actions are brought into that harmony which constitutes the essence of character. We may here understand, then, by character, *the consistency of all willing and acting through their subordination to practical principles, these being in turn subordinated to one highest principle of moral conduct.*

The quality of character depends upon the content of the practical principles; if these are throughout moral, and if at their head stands the decision to govern one's self under all circumstances according to the demands of the moral law, and in accordance with the voice of conscience, the character is then a moral one. Where any other determining power, as, *e. g.*, a final end sought through the volition of

1) Such collisions are not rare. The rescue of my fellow man bids me tell a lie. It is here difficult to be true in like degree to the two maxims: "Help your fellow man" and "Speak the truth." One must govern himself according to the higher, and avoid the lie. In the same manner the maxims of justice and those of good will come into conflict. Here the rule is, that one should above all avoid moral blame.

passion, takes the place of the highest moral maxim, of course there can be no moral character.

Only a moral character is truly a character at all, for a consistency running through the whole life of man and through all his actions, can be reached only under the form of morality, whose individual demands possess the greatest harmony. The immoral character finds itself in contradiction with the eternal demands of morality, which can not be dismissed out of hand, and which when they once become valid in the consciousness of the immoral man, torment him through remorse so that he collapses within himself. (Character of the robber, Moor, according to Schiller's portrayal.)

Moral character is the highest aim and most perfect form of psychical development. It is a work of art, which man must exhibit throughout his whole life, and in all his volitions and actions, and which he must regard as his highest purpose. It is consequently an *ideal*, only approachable by man in his earthly life. It is much that some of the practical principles of his spiritual personality are able to bear the stamp of character.

Remark 1.—Rationality—morality—freedom—firmness of character, are apprehensions of the same notion from different sides. He who acts rationally acts morally; for the content of reason is the demands of the moral law; he is also free in his action, because he determines himself, not in accordance with the momentary state of his consciousness, which is inclined to favor now this, now that desire, but according to the unchanging demands of his rational insight, which forms the fixed center of his ego. By thus freeing his volition from all accidental vacillations, he acts consistently; *i. e.*, as having character.

Remark 2.—The practical principles by no means demand of man a particular volition; they leave him, rather, the greatest freedom, and demand only that in the choice of a volition arising from a specific occasion, he shall not decide until he has listened to what the moral maxims prescribe. Consistency of moral character is, then, to be distinguished from a monotonous uniformity in action, for the

volition for which a moral character in any given case will decide, depends not only upon the nature of the principles involved, but also upon the nature of the material to which the principle is to be applied. This material consists in the manifoldness of situation in which the acting character finds itself, and over which it is master only to a limited extent. As these situations vary, so will also consistent volition and action. This application of ideal principles to empirical matter is what gives to human virtue the aspect of a work of art, in whose realization the special skill of the individual exhibits itself. It does not suffice, therefore, merely to yield to moral principles; one must also possess wisdom enough to be able to decide how a volition under given circumstances may be subsumed under the total of moral principles. There are cases conceivable in which such a subsumption would require especial skill.

Remark 3.—As human consciousness manifests itself as sensibility in regard to feeling, so in regard to volition it manifests itself as moral intention, which is either good or bad, since the will is the immediate object of moral judgment. We ascribe morality to a man in whom the totality of volition is of large magnitude, because in this case the individual acts of will do not contradict, but further one another; whereas we ascribe lack of morality to one in whom the totality of volition is small, since one volition is annulled by another. Character is, therefore, the expression for a uniform moral direction of will, which brings the individual volitions of a personality into such inner and reciprocal harmony that their sum is a maximum. Every contradiction in volition gnaws at the root of character, whereas agreement and consistency strengthen it. The pure ideal of character and moral activity is a fullness of volition and action which, spread over the space of time alloted to one being, stand to one another in organic unity, and from which the sharp outlines of a self-realizing personality shine forth. The realization of such an ideal is the highest function of man. The fulfillment of this function reveals itself subjectively in the sum of those satisfactions, which taken together comprise the *happiness* of man. While the contradiction between unbridled desires distracts the mind, and passion tends artificially to unite them in eccentric foci of thought, character, on the other hand, is the only true form of self-consistent consciousness, the true source of inner happiness.

§ 101. IMPUTATION.

Imputation is a judgment, declaring that a particular outer consequence, as deed, has arisen from the ego of some particular person. The volition stands between the consequence and the ego, as a mediating member; for the effect can be related to the ego only by means of the will. Imputation has, accordingly, two aspects. The first, as imputation in the narrow sense, ascribes the consequence as deed to a particular volition; the second, as higher imputation, relates the volition to the ego.

Imputation in the narrow sense has to decide to what extent a given consequence is a *deed; i. e.*, has proceeded from volition. The deed extends as far as volition and consequence coincide; *i. e.*, as far as the sum of external changes corresponds to the mind's conception of them.

In particular cases, an incongruity may arise between volition and consequence. Each plus upon the side of will which is not covered by effect remains mere design, as, for example, when murder is intended but merely a wound results; every plus on the side of consequence not covered by volition remains mere event, as, for example, a death stroke where only wounding was intended.

Although imputation of the minor sort extends in general only so far as result and intent coincide in the deed, yet under certain circumstances the mere intent and the mere result may be taken into consideration, in that the former may be inferred from outward circumstances (attempt of a criminal), or in how far the latter ought to have been regarded in will; *i. e.*, should have been foreseen (transgression and carelessness).

In the same way, the lack of consequence where there was a duty, may be imputed. But the imputation vanishes entirely where there was no volition, or where the outer consequence together with the volition stood outside of connec-

tions perceivable by the latter, so that according to the common nexus of things the result could not be ascribed to the will.

The higher imputation is the assertion that some given volition has proceeded out of the ego of a particular personality. This imputation relates to the decision, as to how far, in the moment of deed, the subject of the volition was in a condition of psychological freedom; *i. e.*, as to how far he was responsible.

Judicial imputation in the court of justice presupposes the responsibility of an individual so long as he does not appear excluded by certain anomalous conditions, which are usually more or less specified in the statutes, but rarely made precise. Among these anomalous conditions are such as the various forms of mental disease, sleep or states arising therefrom, and temporary insanity.[1]

This judicial imputation, further, makes only two distinctions with regard to responsibility, according as psychological freedom, and with it responsibility, is present or not.[2] Only in the form of so-called "alleviating circumstances" have the legal statutes regarded the degree of responsibility in the adjustment of punishments.

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1) J. B. Frederick in his "System of Judicial Psychology," chap. III., § 2, ("*System der Gerichtlichen Psychologie.*") protests against the specializing of anomalous mental states altering responsibility in law statutes, "because specialists are not agreed as to the naming, defining, and classifying of psychical diseases, and because, on the one side, the scheme of psychical anomalies for forensic purposes is much greater than that of mental diseases; and, on the other side, because the stability of once enacted laws is opposed to the rapid progress of psychology in the field of science and experience" (p. 75). Instead of this the statutes ought to contain the general statement: Every individual who at the time of the deed was not in a free mental condition is not responsible (p. 83).

2) Friereich says: "There are no degrees of imputation, because there are no degrees of rational freedom of volition upon which it is based. There is no middle thing between psychical freedom and lack of freedom" (p. 122).

Moral imputation, on the contrary, distinguishes different degrees of responsibility, which answer to the different degrees of perfection with which the apperception of will, from the side of the more or less wakeful ego concept, acts. It distinguishes hasty deeds from those of deliberation, it separates moral confusion from deliberate wickedness, and investigates closely the connection in which the individual volition stands to the norm of will; *i. e.*, to character.

Remark.—Without presupposing mental disease, there may be situations where the psychological freedom, and with it responsibility, if not excluded, is reduced to a minimum. Volition may have its source either in a momentary state of consciousness, of which one is perhaps not master, or in a single principle, or in the whole character. In sudden passion a man is "beside himself"; an apperception by the suppressed ego concept is out of the question. Many volitions and actions "surprise" one so that soon after the deed, when he has come to himself, he would regretfully undo his deed, if he could. Lack of regard to the degree of responsibility may be characterized as a chief fault of the present customary infliction of punishment.

APPENDIX.

MENTAL DISEASES.

§ 102. THE DREAM AS A PROTOTYPE OF MENTAL DISEASE.

Mental diseases have about them something wonderful and inexplicable only so long as they, with their manifestations, stand out of all analogy with normal soul life. One may convince himself by closer investigation, however, that the beginnings of mental disturbance are largely to be sought among mental states held to be healthy, and that real mental diseases show in remarkable degree what we, in daily life, have occasion to observe in ourselves and in others.

It is in particular the condition of sleep (§ 12) which shows us temporary phenomena similar to those we find to be permanent in mental diseases.[1] In sleep it is a single, extraordinarily strong concept mass, standing out of connection with the concepts of the waking state, that, by means of strength and opposition to the ruling concepts of the day brings about a more or less complete obscuration of our consciousness. This concept mass is the resultant of the body sensations, which, corresponding to the tired condition of muscles and nerves, bring about and accompany sleep. Like a mechanical force, these concepts, acting as a mass alone, without significance, and without organic connection, clear

1) We should soon come upon the track of consciousness and of insanity, could we know what sleep, what waking is. Reil's Rhapsodies, p. 87.

the significant phenomena of waking life from the theater of consciousness. This great concept mass, which appears as an aberration of the vital sensation, may be called the *sleep-sensation.* (Compare § 30, Remark 2.)

The arrest of concepts through the sleep-sensation is either complete or incomplete. The first occurs in deep sleep, the latter during the state of half sleep, when the concepts appear in consciousness as *dreams.*

The concepts of dreams are usually distinguished on account of their peculiar intensity, because they do not suffer the arrest which, during the working state, arises from the senses and from reproduction; for the senses are locked in sleep, and reproduction is hindered by somatic pressure. Hence, on account of their liveliness, concepts appearing in sleep assume the character of immediate impressions of sense, and are mistaken for perceptions.

In the state of sleep, the free association of concepts, and consequently their reciprocal determinableness, is hindered on account of the physiological pressure of sleep-sensations. Certain ruling concepts of the waking state do not appear; as when, for example, we wander in dreams upon the surface of the water, without being reminded that water yields to the weight of solid bodies; or when we converse with persons long since dead, because we have forgotten the fact of their departure from life.

The confusion of reproduced concepts with immediate sense-perceptions (hallucinations) destroys the validity of sensations, and the absence of the right thought at the right time is the surest characteristic of defective reflection. He who in a waking state thinks he "perceives" things which are not present, or who by the absence of the most common determining thoughts should, *e. g.*, try to walk upon the water, or to converse with the dead, would certainly be regarded as a sufferer from mental disease.

Dreamlife is further a prototype of a diseased mental state, because here also the unity of consciousness is destroyed. It is known, for instance, that the dream does not regard space and time, and that it thereby perpetrates the greatest absurdities, bringing persons and things together from different places and times. Nor does the dreamer remain with one object of thought, but like the insane man springs from one thing to another.

The highest unity of consciousness is the one and indivisible ego, which amid all changes is still identical with itself. This unity of self-consciousness is broken in sleep. As the dramatic poet apportions the various rôles among the *dramatis personæ*, but is conscious of his activities through the ever recurring thought, "It is I who write," so in dreams our ego divides into various personalities[1], and experiences the strangest alienations on account of the suppression of our true self-consciousness (the historical ego), so that we not seldom act in dreams in accordance with principles which in a waking state we should reject with the greatest indignation.

In sleep we are in precisely the condition of insanity, in that we are unable to accomplish that which we desire and strive for.

In dreams memory and judgment appear suppressed and disturbed, and with them also reason and self-consciousness. This is on account of the psychological pressure, and the one-sided and accidental arrest of concepts which follows from it.

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1) The divisions of the ego are often very strange—as when Johnson found himself engaged in a contest of wit, and was excelled by his opponent; or when a Herr von Göns dreamed himself back in school, and heard his schoolmates answer questions which he himself could not answer. And to whom has it not occurred, that he has in dreams surpassed himself?

§ 103. PSYCHICAL DISTURBANCES WITHIN HEALTHY MENTAL LIFE.

The waking mental state of man presents many phenomena of psychical disturbance, which, on account of the principles of humanity and of reciprocal connivance, we do not reckon as true mental diseases, because they do not so permanently and radically alter the equipoise of spiritual life that an understanding of the present condition is excluded, and that it is impossible to bring the mind to a realization of its erratic ideas through proper means. These phenomena may be reduced to the following types:

1. *Excessive limitation of the range of thought.* Temporarily this assumes the appearance of absorption in a fixed concept mass, which is investigated in all its relations, every thing foreign being rigorously repelled. Here belongs the mental state of the victim of melancholy, who stubbornly resists all consolation and all recreation in order to pursue his dreary thoughts, for the most part imaginations—but also the absorption of the thinker, who, observing nothing about him, shuts himself up in his world of abstract notions. This narrowing of consciousness may also become habitual when change in lines of thought is excluded, and the man remains in a monotonous mental state. The rule of passion, exclusive education, undifferentiated occupation, narrow limitation in external environment, society, calling, and habit, not seldom lead to such a limitation and narrowing of the mental horizon. With this is connected,

2. *The extraordinary prolongation of the course of representation*, which manifests itself as slowness of apprehension, as feebleness of natural capacity, and in a higher degree as feeble-mindedness, with which the readiness of the genial mind with its witty remarks and happy apprehension is in pleasing contrast. The slow, heavy mind (*tardum ingenium*) is not able to follow the flight of events or the sinuosities of

an address, but limps behind with questions after others have long since understood.[1] In contrast to this stands,

3. *Excessive scattering of thought* without concentration, as an aimless vacillation between excitations presenting themselves from opposite directions. Here are lacking the necessary apperceiving concept masses which effect the concentration and direction of the course of representation. "Irrational education in periods of development, which gives the mental powers their direction; suspended studies; frequent change from one calling to another; social conditions teaching a multitude of contradictory human interests and views, and finally along with this the causing of nomadic mental habits; the unstable external lingering, with its chaotic variety of impressions,—all these are causes which lead to the diffusion or scattering of mental life" (Lotze). If to the ungoverned multiplicity of concepts and endeavors the idea of strength or intensity is added, we have,

4. *Violence of mental movements* as a consequence of a rapid, strong, and uncontrolled course of representation. At first this violence breaks out in momentary passion, but it becomes gradually fixed as a disposition to passion and excessive excitability.

The man imprisoned in a narrow field of thought, or inaccessible to teaching from without, the passionate, the melancholy, the delver after subtilities, the feeble minded and lazy, the man afflicted with mental dissipation or violent emotion—all are far removed from the picture of mental health; nevertheless, it occurs to no one to declare them ready for the madhouse. And yet it requires but a step to transform

1) "There are feeble minded who deport themselves rationally, observing all proper forms, even of the most cultured manner of life. And yet it is only the outer shell of man that has been preserved, while the mental kernel has long since disappeared, or perhaps never was present. The inner hollowness is revealed by empty phrases and manners, which remain as the results of lifelong habits" Ricker, Mental Diseases (Seelenstörungen), p. 78.

the four given types of mental disturbance into the four chief types of mental disease; viz., melancholia, imbecility, dementia, or the state of the fool, and mania. This step is taken as soon as, in consequence of the reciprocal interaction between body and mind, this disturbance has become fixed in the altered functional capacity of the nervous system.

§ 104. THE RISE OF MENTAL DISEASES.

We reckon all those permanent anomalies of mental life in the class of real mental diseases in which the reciprocal determinableness of concepts is disturbed to considerable degree, so that the man is thereby rendered incapable in the ordinary affairs of common life.

The mind cannot in itself become diseased, because the reciprocal determinableness of concepts cannot be destroyed in purely psychological ways. However much the equipoise of concepts may be disturbed by violent mental agitations, it may be restored in accordance with psychological laws; however great the errors and illusions in which man may for the moment find himself, the psychological way is always open for their correction.

The basis of our self-consciousness is the concept of our own body, which in turn rests upon the broad basis of the general body sensations (§ 58). All concepts entering consciousness there meet the vital sensation and fuse with it. Deep-seated disturbances of the nervous system, proceeding from physical ills, must, as a consequence, also bring about a transformation of the vital sensation (§ 18), which may become very dangerous for the continuity of mental life. For, the vital sensation altered through sickness forms a new and very powerful concept mass, which forms a sharp contrast to the content of the former mental life, and instead of form-

ing a basis for it, threatens partially to obscure it, after the analogy of the sleep sensation. The self-consciousness is divided, because the concepts connect themselves partly to the normal (historical), partly to abnormal vital sensation. The two ego concepts alternate with one another as in sleep and waking, and struggle for supremacy, until, with increasing mental disturbance, the new, abnormal ego succeeds in releasing itself entirely from the past, displacing entirely the historical ego, so that the latter becomes a mere "he." This is possible only as the somatic foundation of the latter, namely, the normal life sensation, is obscured by the advancing bodily disturbance, and its corresponding body sensations, just as in sleep the vital sensation is obscured by the sleep sensation. There is then formed the concept of an imaginary body which reveals itself in hallucinations of the vital sensation, as a crippling of the various parts of the body, or a shortening or lengthening or doubling of the same; as increase or decrease of bodily weight; as an exchange in sex or age; as transformation of the body into glass, wood, butter, etc.

To the concept of an imaginary body there is soon added the concept of an imaginary world, which manifests itself through hallucinations of the various senses. Since the pressure of the alienated vital sensation, like the sleep sensation in dreams, affects the concept groups in unequal measure, it destroys memory and the action of the understanding in certain directions, whereas it allows them to proceed in others; or it may, as in clairvoyance, unduly intensify them. Because in arrested reproduction and apperception individual members of concept masses and series drop out, the concept structures lose that logical character which they manifest in waking and healthy soul life, and take on the aspect of the distorted and "deranged." This at least in general; in particular, exceptional cases may arise where this logical character

remains, so that the insane man often passes a sharp judgment in individual things, and fools often speak the truth. [1]

Remark 1.—According to what has been said, mental diseases have their source in the body. This view is supported by the fact that they are caused by direct injury to the brain, and by diseases of the nervous system, as well as by the fact of hereditary disposition to them.[2] The fact, also, that mental diseases may be occasioned by psychical states, does not disagree with the foregoing. The violent emotions show us how deeply even transient mental states may affect the nervous system, and what intensifying they experience from the altered state of the nerves. If the emotion is repeated, the temporary disturbance of the nerve activity may become permanent, and on its own account bring about lasting mental disturbances. In this respect, mental disturbances may be regarded as violent emotions grown permanent.

Where the physical disposition to insanity is already present, or where it is implanted by means of sickness, unnatural habits, drunkenness, or other excesses, purely psychological influence, as unexpected calamities, passions, etc., may easily lead to mental disease; but where this disposition is wanting, the most violent mental disturbances and the severest blows of fate are not able to endanger the health of the mental life.

From this it follows as a matter of course that it is impossible to cure the insane by purely psychical methods. "I understand you very well," said a young victim of *melancholia*, to the celebrated physician, Esquirol, "I understand your conclusions. If I were convinced of them, I should be cured." Only from a physical strengthening with appropriate soothing of the nervous system, accompanied by a corresponding mental treatment, can the curing of mental diseases be expected.

Remark 2.—In common life mental disturbances are more ascribed to easily perceived psychical occasions than to the more hidden phys-

1) The fool is free from those considerations which give the judicious pause; he blurts out the truth, where the wise man dares only think; hence in earlier times the custom of keeping for this purpose artificial fools, called "court fools."

2) Of 425 cases of mental diseases which the practical specialist, Ricker, observed, 144, or more than one-third of all the cases, were traceable to decided mental disturbances in the nearest relatives of the persons afflicted.

ical ills lying at their basis. Thus, we see insanity proceeding from temporary and permanent passions, from anxiety and trouble, from love and homesickness, from political and religious fanaticism; we may in great cities, even see insanity become epidemic. However true it may be that the beginning point of insanity is to be sought in the exigencies of mental life, its true cause always lies in the body. The mental elasticity is so great that even the most violent storm that could rage through it must still itself again, did it not call forth changes in the bodily substrate, whose return to a normal state of functional activity is less easily accomplished, thereby bringing about more or less permanent mental disturbances.

Remark 3.—The physical changes which produce the abnormal somatic pressure and with it real mental disease, exercise an important influence upon the soul, even in normal mental life. "Conditions of indefinable anxiety and oppression often master the soul, even when the general conditions of life appear perfectly satisfactory; they increase to painful restlessness, which can find relief in no line of thought, in no occupation; even the smallest impression oppresses the soul with a weight out of proportion to its importance.....certain concepts, once called forth, cling to consciousness with unwonted tenacity, so that wherever we turn remembrance brings them back to us. In other cases an apathy of mind arises; indifference overcomes us, so that every earnest thing, all worthy purposes appear to fail, and all ethical standpoints seem to have only a relative validity alongside of others" (Lotze).

§ 105. THE CHIEF FORMS OF MENTAL DISEASE.

The bodily disturbance, in which every mental disease has its root, may be regarded as the degeneration of one of the four chief kinds of temperament. Four chief forms of mental disease may therefore be distinguished; of which melancholia corresponds to the melancholy; imbecility, or stupidity to the phlegmatic; idiocy or dementia (as the mental state of the fool) to the sanguine; and madness or mania to the choleric temperament.

In melancholia the somatic pressure rests upon the whole consciousness, with the exception of a single circle of concepts, which on this account appear with so much the more vigor.[1] The main thought of this concept circle, which dominates the whole mental life, is an illusory concept, which is called a *fixed idea.* In that the fixed idea yields to no opposing concepts, not even to those whose correctness would be at once recognized by any sane mind, the character of the insanity is discovered. The historical ego is suppressed as in dream, and a new one whose middle point is the illusory concept rules the consciousness.

When the madhouse with all its inmates can not bring one who holds himself to be a king to a knowledge of his insanity, we have proof in this fact that the historical ego has been suppressed, and the determinableness of concepts resolved. This form of insanity has lucid intervals; *i. e.*, rational moments, during which the illusory idea is beneath the threshold, and the course of thought normal. By and by, however, the patient places his fixed idea in more or less absurd connections with all his concepts, and the lucid intervals grow rarer. The insane notion has become permanent in consciousness. The melancholy temperament, ruling passions, all that favors too great and too permanent narrowing of consciousness, furthers the disposition to this form of insanity.

Imbecility, or stupidity, which may be regarded as an exaggeration of the phlegmatic temperament, is the retardation of the mental life until it is sunk into a stagnating stand-still. Imbecility, often inborn, often the final result

1) The somatic pressure (Compare § 102), *i. e.*, the complex of body sensations brought about by the abnormal physical state forms with the ruling concept masses of clear consciousness a purely accidental association, and the alliance of these two powers is so strong that they force even the historical ego of the man beneath the threshold.

of preceding forms of sickness, has countless grades, being on the one side merely feeble-mindedness, and ending on the other in a complete quenching of all spiritual alertness. In a few mountain regions which are characterized by narrow and deep valleys, want of sunshine and circulation of air, as well as by the peculiar character of ground and water, imbecility in connection with bodily disfigurement appears endemically as cretinism.

The mental state of the fool may be regarded as the degeneration of the sanguinary temperament; it has no ruling concepts and no lucid intervals. The mental life presents the picture of complete distraction, thought being held together by no logical or psychological bands. The concepts of the fool leap from one object to another, without rule or logical order.[1] Though in the first form of mental disease mentioned, the psychical disturbance proceeded from a single middle point, the fixed idea, it is spread over all concepts with the fool, and manifests a widely extended mental illness difficult to cure.

In madness, or mania, which may be regarded as the degeneration of the choleric temperament, we find the concept life of the man at the height of a permanent passion, or violent emotion, which manifests itself as a wild impulse to bodily actions without end or aim. This impulse by no means has its seat in a fixed concept series but in an organic excitability of the highest degree; the actions of the maniac, which break out without any reflection and even against the will,

1) The physician, Ricker, gives a sample of the course of thought of an educated insane patient, who was accustomed to record his confused thought upon paper. We find therein, "——there, where love and fidelity meet, and love and fidelity kiss each other; there, where noble, good men live, it is good. And where human nature is, follows benevolence to the powerful, creator's privilege, everlasting youthful existence, never failing exaltation, whose pure maiden, feminine in truth, power and clearness, pure women, and the powerful creator's blessing, do good," etc.

and which may be turned against even beloved persons, has no other purpose than to give relief to this excitability, just as man in the midst of intense bodily pain performs all sorts of contortions, or as an angry man throws chairs about or smashes glasses. Because this form of sickness appears with a certain inviolability of understanding—the patients, when attacks are approaching, warn their friends not to come near them, and often have themselves locked up—it has been called "*mania sine delirio*," and as such has led to much controversy as to the responsibility of the patient; such controversies, however, may be easily decided when one regards the undoubted bodily origin of all mental diseases.

The given classification is not one of the mentally diseased, but of mental diseases. Thus, a mental illness may begin with melancholia, increase to madness, and end with imbecility.

Remark 1.—Still stranger than the *mania sine delirio* are those partial mental diseases which bear the name, *monomania*, and which consist in the most irresistible impulses to actions of a particular sort, though with otherwise perfect mental health. Of the various kinds of monomania, whose study is of special importance for the application of punishment, the commonest are the mania for stealing, for killing, and for burning. Cases are known where persons of education and high social standing are, without any kind of outer need, subordinated to the impulse to steal, from which influence they can in no way withdraw themselves. In the same manner the impulse to kill arises and grows. In the years of development of both sexes, the impulse to burn is not seldom active. It rests upon a peculiar love of fire and under some circumstances leads to actual arson.

Remark 2.—Now that the chief forms of mental disease have been fixed, the otherwise vague notion of mental soundness may be more exactly defined. It becomes, accordingly, a condition which is the exact opposite of the four main forms of mental disease. It is characterized, therefore, in contrast to melancholia, by the rational equipoise of concepts according to their true value—in contrast to imbecility, by a proper rhythm of mental alertness—in contrast to

the mental state of the fool by the rational collected state of mind, and by logical control of the course of representation—in contrast to madness, by the subordination of the will and impulses to insight.

§ 106. INTENSIFYING OF MENTAL ACTIVITY THROUGH DISEASED CONDITIONS.

We find as a side piece to mental diseases those rather rare anomalous conditions in which the mental activities, in consequence of somatic influences, experience an increase in intensity, though this for the most part is one-sided.

All these conditions are closely related to sleep, and externally proceed from it or assume its form. Clairvoyance, somnambulism, and mesmeric sleep are among these conditions. During these states the consciousness is obscured by somatic influences as in sleep, thus illuminating, as in dreams, a single line of thought, the realm of clairvoyance. What no voluntary effort of abstraction during waking hours is able to accomplish, namely, the concentration of the whole mental activity upon a single line of thought to the exclusion of all disturbing minor concepts, is brought about by the artificial night of abnormal sleep. It is also always possible that disturbances of mental life which have arisen in the waking state from connection with an unfavorably organized body may be intensified by abnormal excitation of the central organs, and the soul be thereby placed in a state of greater freedom from the determining power of the body, thereby bringing about a greater activity of intelligence. An unnatural augmentation of intelligence, however, even in these states has never been observed; an important piece of new wisdom has never proceeded from the mouth of somnambulist or clairvoyant. Just as little can the night walker, who strides in safety over roofs, withdraw himself from the rule of natural laws; the greater skill which he develops in sleep

arises from the greater daring given to him by abstraction from the sense of danger.

Most enigmatical are the phenomena of the so-called "mesmeric sleep," which are artificially produced through certain manipulations by the mesmerizer upon a person susceptible to these influences, and whereby the sleeper remains in a certain active communication (*en rapport*) with the mesmerizer, giving the most astonishing answers to questions proposed to him. However far these conditions, for lack of authentic cases, may be removed from a true explanation, they do not stand out of all analogy to normal phenomena of mental life. The artificial production of sleep by monotonous, sleep-inducing impressions is a well-known phenomenon of normal soul life, and the one-sided intensifying of the activity of the mind finds an explanation in the abnormal concentration of consciousness. The "visions" of the mesmerized are always related in some way to his favorite notions, and are colored by the rest of his mental life. Thus a mesmerized pious man will have visions with a religious content, whereas the politician will prate of political reform. Finally, he whose whole thought, feeling, and will are in excessive degree yielded to one person, the magnetizer, will in his mesmerized state, be governed in his speech by this person alone, and will manifest as open a sense even to his slightest volitions, as the sleeping nurse shows to the most insignificant movements of the child intrusted to her care. What in these states would be really supernatural, as, *e. g.*, reading with the tips of the fingers, seeing with the cavity of the heart, etc., was not established before scientific examining commissions, and belongs to the realm of exaggerations.

These considerations do not, therefore, warrant the acceptance of the hypothesis of a magnetic fluid active from individual to individual like a nerve principle, which gave the name to this class of phenomena.